NOVEMBER, 1927
MONTHLY No. 262

HITCHCOCK'S MACHINE TOOL BLUE BOOK

DIRECT MAIL ADVERTISING

to

Industrial Machine Shops
Automotive Plants
Railway Mechanical and
Purchasing Departments

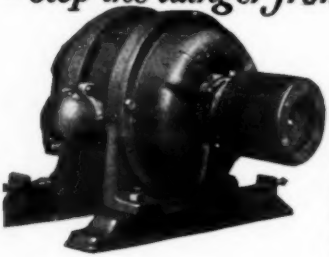
AND ALL OTHER
MACHINE TOOL
USERS

Controlled Circulation
25,000 Monthly

Published By
HITCHCOCK PUBLISHING CO.
508 So. DEARBORN ST.
CHICAGO

End air-gap inspection

~stop the danger from neglect!



No matter how many good qualities are put into a sleeve bearing and its mounting, it will still show wear. This means that on induction motors with their small air gaps that the gap must be regularly inspected. Failure to do this may result in the rotor rubbing the stator windings causing a shut-down and an unwelcome repair bill.

This can't happen with Reliance Ball-Bearing Motors. The air gap remains uniform throughout the life of the bearing. The cost of inspection and the danger from neglect are eliminated. Even in case of a bearing failure the rotor cannot drop and the shaft is not scored.

This advantage alone is enough to justify the slight additional cost of ball bearings.

Reliance Electric & Engineering Co.
1050 Ivanhoe Road, Cleveland, Ohio

Branches: **Boston; New York; Philadelphia; Pittsburgh; Cincinnati; Detroit; Buffalo; Chicago; Birmingham**

RELIANCE AC DC MOTORS
with Ball Bearings

When You Want Orders

Don't Overlook Any Bet

There's always someone buying, even when orders are widely scattered.

If you want all of those orders you can get, you either go after them in whatever way you can or you fall short of your possibilities. That's fundamental.

Of course it is physically impossible to solicit the business of anything near all of those "someones" except by means of printers' ink. It's a necessary adjunct to good marketing.

But you overlook many a bet—you fall far short in the completeness of your marketing plans—if you fail to use some form of direct-by-mail advertising that covers your field in its entirety as nothing else can.

The Blue Book affords that complete service to manufacturers of machine tools and kindred equipment. And being cooperative direct-by-mail advertising, it adds "economy" to "completeness." There's nothing else to take its place in this essential service.

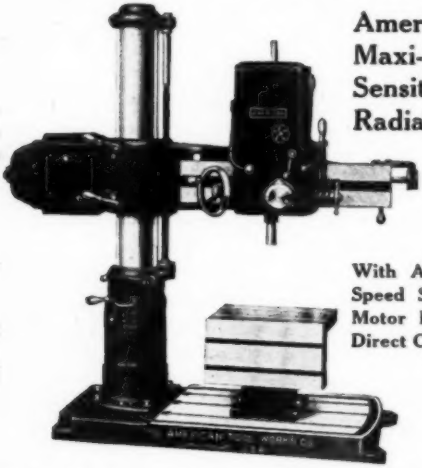
This is MORE than a question of ordinary advertising; it is a matter of BUSINESS, for business men who WANT business.

Rates on application to Hitchcock Publishing Co.,
508 S. Dearborn St., Chicago.

Sensitive Drilling

Of greater range and larger output

At 2,000 R. P. M.



American Maxi-Speed Sensitive Radial

With Adjustable Speed Simplified Motor Drive for Direct Current

Reduced costs must come from the installation of modern production tools. Standing at the head of sensitive drilling machines is the American Maxi-Speed Radial.

It's the fastest and most powerful machine of its kind ever built, combining the range of the radial with the speed of the sensitive. It drills and taps holes up to 1 in. diameter faster, cheaper and better than ever done before. Furnished also with a. c. motor and belt drives.

Will you investigate? We're at your service

The American Tool Works Company

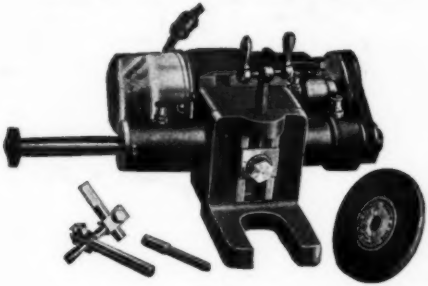
Cincinnati, Ohio, U. S. A.

LATHES RADIALS SHAPERS

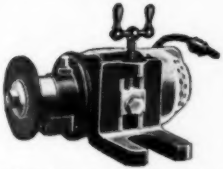
HISEY

Combination

Internal and External Lathe Grinders



Give Tool Room Accuracy with Wide Range Adaptability



A velvet finish can be obtained on any internal or external work. For the Tool Room the smaller size is invaluable while the larger sizes are adaptable for grinding engine cylinders, drums, journals and all classes of roll and surface work.

No lathe too small—No job too large

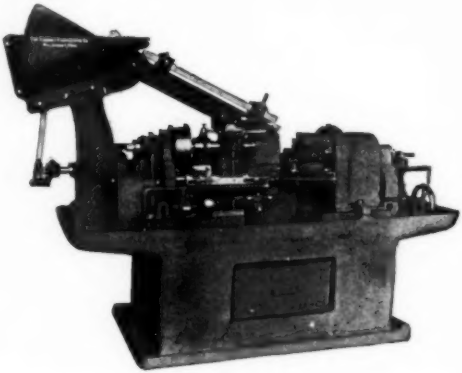
Write for Catalog 35-H

The Hisey-Wolf Machine Co.

Electric Drills, Grinders, and Buffers

CINCINNATI, OHIO

Represented in all Principal Cities



Economy Automatic Combined
Pointing and Threading Machines

REDUCE
BOLT COSTS

THE ECONOMY ENGINEERING

WHY ?

1st—One Man Runs Four Machines.

2nd—Machines Full Automatic—Eliminates Human Element.

3rd—Pointing Operation Free.

4th—Saves Handling From Pointer to Threader.

RESULT

Increased Profit for Manufacturer

COMPANY, - Willoughby, Ohio

How Much are Your

High Speed Steel Tool Holder Bits Costing You ?

The initial purchase price is the first cost of High Speed Tool Holder Bits but the cost of extra grinding, new set-ups due to failure of a tool, and the labor involved, would sometimes appear staggering if these costs could be closely followed in such a manner as to show conclusively what a little lowering in quality will amount to even in a period of one week.

The heat treating is done in such a way as to practically give individual treatment to every bit, and in this lies the reason for uniformity which is, we believe, the most valuable property of a tool bit where production in machining is of importance. The failure of one bit will often necessitate in a set-up practically as much work as would be required if the entire set-up failed, so that it often happens that it would be just as well for a number of bits to fail as to have one fail at a critical moment.

Our Tool Bits are made, not to give an exceptional run in a few instances, but to maintain a constant standard without variation. There is no extra charge for this uniformity and Simonds bits when used over a period of time will show a distinct savings in production costs.

These bits are cut to standard tool holder lengths, with 30 degree bevel on each end. Finished straight and true to size, ready to be ground and put to work. Carried in stock in 5 pound and 10 pound boxes, one size or assorted sizes in each box.

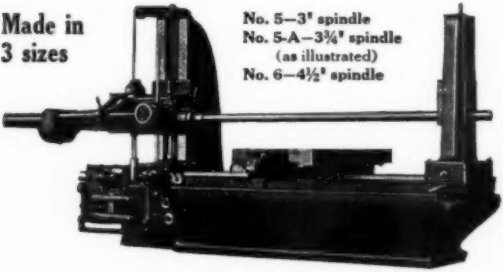
Sizes	Bits per Pound
1/4" square x 2 1/2" long	22
5/16" square x 2 1/2" long	14
3/8" square x 3" long	8
7/16" square x 3 1/2" long	5
1/2" square x 4" long	4
5/8" square x 4 1/2" long	2
3/4" square x 4 1/2" long	
7/8" square x 6" long	
1" square x 6" long	

Simonds Saw and Steel Company

1350 Columbia Rd., Boston
109 Lafayette St., New York
635 Mt. Elliott Ave., Detroit
420 Canal St., New Orleans
85 First St., Portland, Ore.
127 So. Green St., Chicago
130 Forsyth St., S. W., Atlanta
239 Court Ave., Memphis
228 First St., San Francisco
416 E. Third St., Los Angeles
1934 First Ave., So., Seattle

Insures Production and Precision

Made in 3 sizes



No. 5—3" spindle
No. 5-A—3¾" spindle
(as illustrated)
No. 6—4½" spindle

Defiance No. 5-A

Horizontal Boring, Milling, Drilling, and Tapping Machine

You cannot meet today's production demands nor keep costs within reason by using obsolete equipment.

Meeting TODAY'S Requirements

The machine illustrated above is made to meet the requirements of intensive production and precision. Objectionable features such as complication and inaccessability have been eliminated. The speed and feed mechanisms and the contents of the spindle housing are of unit construction—each unit affording complete access without disturbing parts of other units. Many other modern improvements have been added, and we should like to tell you about them.

Write for the descriptive folder, or for the complete Catalog of "The Defiance Line" of Cylinder Boring Machines, Heavy Service Drilling Machines, Rail Drills, Horizontal and Vertical Multiple Drilling Machines, Multiple Tapping Machines and Valve Grinding Machines.

The Defiance Machine Works

Defiance, Ohio

Designers and Builders of Precision-Production Machine Tools and Special Woodworking Machinery

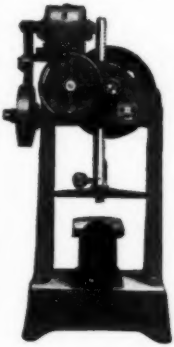
Now Is The Time

when almost everybody seems inclined to

SQUEEZE

things a little

If you have any mechanical squeezing to do, try the



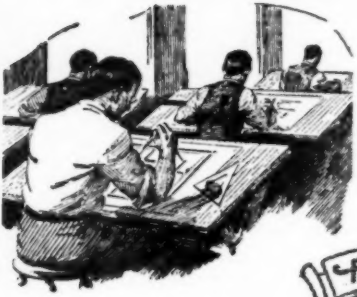
Lucas Power Forcing Press

We also make the

LUCAS "PRECISION"
Horizontal Boring, Drilling and Milling Machine

The Lucas Machine Tool Co.

521 East 99th Street, Cleveland, Ohio



There's a Pease Machine for every Size of Drafting Room

PEASE
CHICAGO

Save time and cut costs by installing your own blue-printing equipment. No disappointing waits or delays due to outside assistance for every operation is under your own control at all times.

Quickly, conveniently, and economically, with the Pease Vertical Blue-Printing Machine, you can get perfectly finished blue-prints on a moment's notice, right in your own drafting room.

Why not investigate the savings and advantages to be had in making your own blue-prints. It's only just a few moments from tracing to blue-print when you are equipped with a Pease machine.

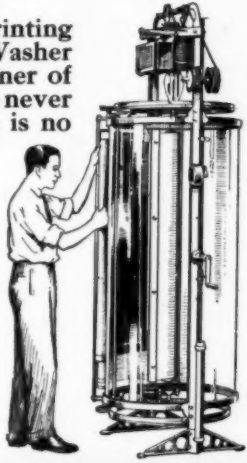
THE C. F. PEASE CO

865 North Franklin Street

Why Not Make Your Own Blue Prints?

The Pease Vertical Blue-Printing Machine with Sheet Washer is made in five sizes to accomodate every blue-printing requirement except where continuous production is required, in which case the Pease Peerless Continuous Blue-Printing Equipment is recommended.

The Vertical Blue-Printing Machine and Sheet Washer can be stood in a corner of the Drafting Room, are never in the way, and there is no expensive installation charge.



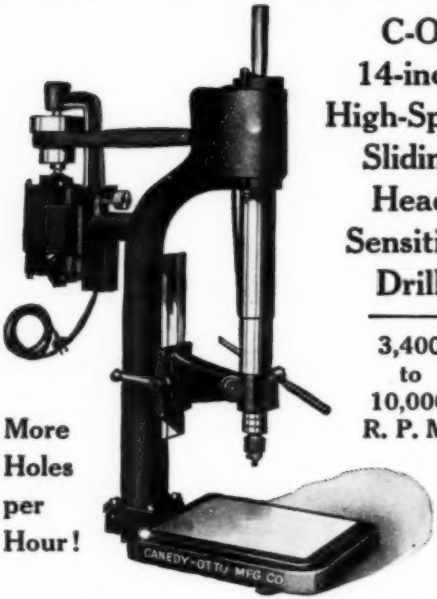
Let us send you facts about how you can cut your blue-printing costs as many other users of Pease Machines have done.

Ask for Catalog MV-65

COMPANY

icago, Illinois

Designed for High Speed Work



C-O 14-inch High-Speed Sliding Head Sensitive Drill

3,400 to 10,000 R. P. M.

More Holes per Hour!

Total height, 41".
Vertical adjustment of head, 7½".
Diameter of spindle, ⅝".
Travel of spindle, 3¼".
Maximum distance of bottom of chuck to base table, 10½".
Size of base table, 9½"x12½".

Speed of spindle, 3,400-5600-10,000.
Largest size of drill, 5/16".
Distance from column to center of sp. 7¼".
Size of sp. pulley, 1½"-2¼-3"x1¼" face.
Bench space, 15"x20".
Net weight, 180 pounds.
Crated weight, 220 pounds.

Complete Information gladly furnished

Canedy-Otto Manufacturing Company

Main Offices and Factory—Chicago Heights, Illinois

New York Branch
407 Broome St.

Complete stock carried at branches

San Francisco Branch
955 Folsom St.

The Improved Canedy-Otto No. 29

3 Spindle Speeds
720-1430-3000 R. P. M.

Completely Motorized—Also Furnished Belt Driven

The Improved Canedy-Otto Sensitive Bench Drill comes complete with toggle switch, cord, socket, 1½" endless leather belt, and chuck. The motor is adjusted on a sliding base that maintains the proper tension on the belt at all times, and cuts lost motion and vibration to the minimum. Now equipped with a 3-step cone pulley which gives three spindle speeds of 720, 1430 and 3000 R. P. M. Complete information, with close price, upon request.

Canedy-Otto Manufacturing Company

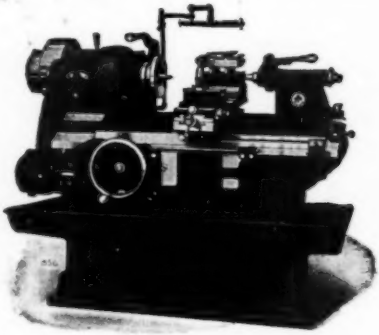
Main Offices and Factory—Chicago Heights, Illinois

New York Branch
407 Broome St.

Complete stock carried at branches

San Francisco Branch
955 Folsom St.

The LeBLOND Multi-Cut Lathe



LeBlond No. 9 Multi-Cut Lathe

The Multi-Cut is a semi-automatic lathe adapted to combined turning and facing cuts using multiple tools. The set-up is very simple and quickly accomplished, there being no cams to consider. The machine can therefore be used profitably on relatively small lots.

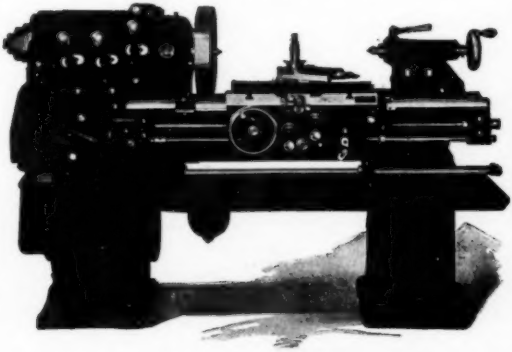
Our complete catalog describes the several sizes in detail. We will gladly send it to interested parties.

THE R. K. LeBLOND MACHINE TOOL COMPANY

CINCINNATI, OHIO

Monarch Ball Bearing Helical Geared Head Lathe

Is giving wonderful service



About 90% of our orders are for Helical Geared Head Lathes, and about three-fourths of those are re-orders.

That means that Monarch Helical Geared Head Lathes are giving wonderful service. It means that if you once used them, you also would order again as you need new lathes.

WHY? Because they are noiseless, smooth running and powerful. Because they have developed spindle speeds never before obtained in geared head lathes. Because they increase production and do better work. Because of their many features for quick and easy manipulation. Because of their ultra-modern design and construction throughout.

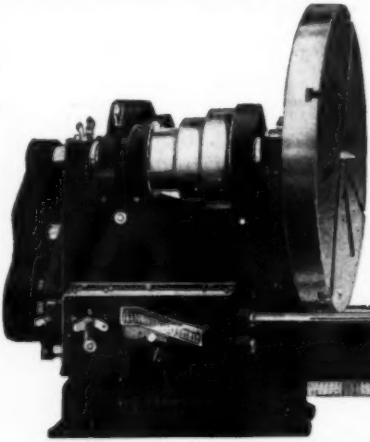
Made 14" to 30". May we tell you about them?

The Monarch Machine Tool Co.

Sidney, Ohio, U. S. A.

A 3-in-1 Lathe of

Gap



Rahn-Larmon 28/50"x12' Series G Exte

There is practically no reasonable limit to the amount of work the "Rahn-Larmon" Extension Bed Gap Lathe will turn out, or the variety it will handle without special setting up or tearing down. Large or small work is handled with equal efficiency. It has ample power and strength and can effect a decided saving in investment, operating and labor costs. If you are not using this lathe in your shop, it will pay you to get in touch with us—without any obligation on your part, we are at your service—

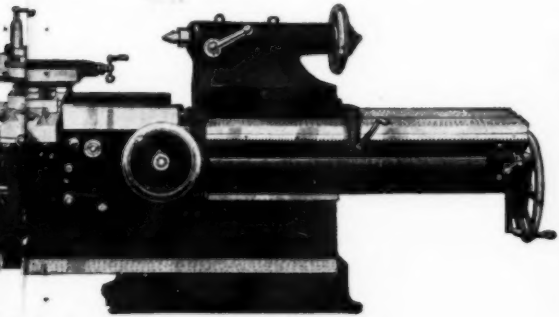
"Rah
Auto
Fabr
Gear
panic
Publ
factu
rugg
for a

Let Us Help You Lower Costs

The Rahn-Larmon Company

e of Wider Range

Takes Between Centers:
Gap Closed, 7 ft.; Gap Open, 11 ft.
Width of Gap, 4 ft. 6 in.



G Extension Bed Gap Lathe

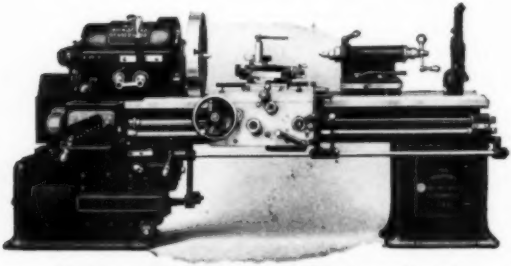
"Rahn-Larmon" Lathes are widely used by Railroad Shops, Automotive Plants and Steel Mills, Coal Mines, Shipbuilding, Fabricating Works, Machine Works, Lumber Companies, Gear Manufacturers, Oil Refineries, Gas and Electric Companies, Agricultural Machine Manufacturers, Foundries, Public Service Corporations, Pumping Stations, Motor Manufacturers and many others. All can attest to their versatility, ruggedness and power—factors that make these lathes ideal for all-around use.

Write for Complete Detailed Information

:: :: :: **Cincinnati, Ohio**

BRADFORD "All-Geared" LATHES

Give Users the Edge on Costs



18" Single Pulley or Motor Drive, With Apron Control

All Bradford Lathes are now furnished with force feed lubricating system—one operation of lever placed conveniently in the front distributes a measured quantity of ***FRESH*** oil to 33 surfaces—thus eliminating lubricating troubles, saving oil, and last, but not least, wear and tear on the lathe itself.

Has Tremendous Power

Because of their construction, Bradfords have tremendous power, yet are practically vibrationless even when pushed to the limit. Tooth and chatter marks are absent. Every strain tendency in the head is ***downward,*** drive is from beneath, tool thrust locks the head tighter to the bed. Gears in the head are large and slow moving—the strain and wear of small high speed gears is eliminated.

Send for our 16-page "All Geared" Lathe Bulletin and tell us of your needs in Engine, Precision or Turret Lathes

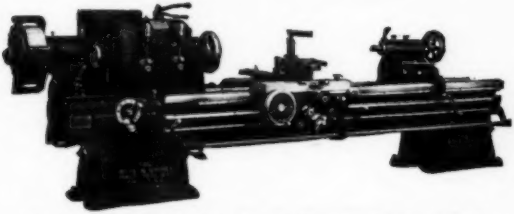
The Bradford Machine Tool Co.

Builders of Quality Lathes from 14 to 48 inches

Cincinnati, Ohio, U. S. A.

Established 1840

"The Lathe with the Longer Life"



Boye & Emmes 24" Engine Lathe, "CONELESS"
[TRADE MARK REG.]

The lathe is of ultra-modern design throughout, and embodies a number of exclusive features that make possible all around economy, accuracy and greater production of the highest quailty.

Features Insuring QUALITY Production

(1) Twelve main spindle speeds, absolutely selective with 13 gears always in mesh. (2) Fool-proof gear arrangement, with gears always running in oil. (3) Easy and efficient spindle control. (4) Tailstock of cutaway type, permitting swiveling of compound rest parallel with the shears. (5) Double plate apron of strongest possible construction. (6) Finest materials and workmanship in every detail.

These scant half-dozen reasons by no means tell the whole story—but we will gladly send you complete details on request.

Write us today—Tomorrow you may forget

SELLING AGENTS:

The Strong-Carlisle & Hammond Co.
1392 W. 3rd St., Cleveland, O. 1300 Fort St. W., Detroit, Mich.

Niles-Bement-Pond Company
New York, 111 Broadway; Birmingham, 28 So. 20th St.; Boston, 75 Batterymarch St.; Chicago, 564 W. Monroe St.; Cincinnati, 338 West Fourth St.; Los Angeles, 454 East Third St.; Philadelphia, 2415 Chestnut St.; Pittsburgh, 1115 Empire Bldg.; Rochester, 89 East Av.; St. Louis, 1909 Washington Ave.; San Francisco, 917 Howard St.

The Boye & Emmes Machine Tool Co.

2245 Spring Grove Ave., Cincinnati, Ohio

Grand Rapids No. 2 Universal

Cutter, Tool and Drill Grinder

With Self-Contained Motor Drive

No factor in the operation of machine tools is as important as that of having sharp cutters, drills and taps. Sharp tools will greatly reduce wear, power consumption and breakage, and improve production and quality.

The Grand Rapids No. 2 is ***really*** universal. Not only can you grind both drills and all kinds of cutters and reamers on it, but you can have one man grinding drills and another grinding cutters, reamers, etc., without either interfering in any way with the other!

Send for complete information—TODAY

Gallmeyer & Livingston Co.

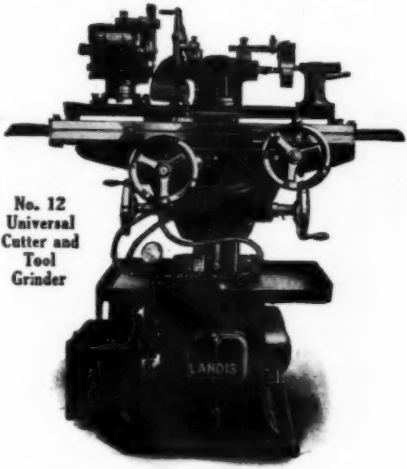
342 Straight Ave., S. W., Grand Rapids, Mich.

Manufacturers of Grand Rapids Drill Grinders, Cutter and Tool Grinders and Tap Grinders. What do you need?

Self-Contained

Cutter and Tool Grinders

With hydraulic table traverse



No. 12
Universal
Cutter and
Tool
Grinder

Available either as a plain or universal machine. Will take care of any kind of cutter and tool work as well as light cylindrical grinding.

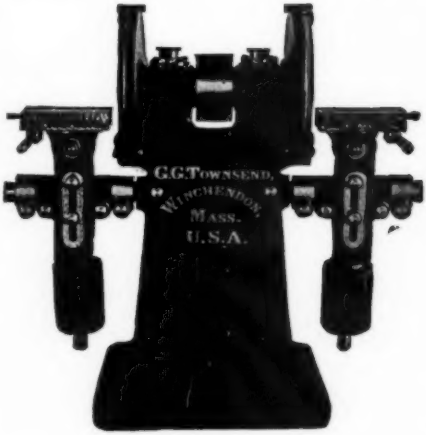
Superior finish results from use of hydraulic table traverse.

LANDIS TOOL COMPANY

Waynesboro, Pa.

New York Office: 2907 Singer Bldg. Detroit Office: 5928 Second Blvd.
Chicago Office: 618 W. Washington Blvd.
Philadelphia Office: 5143 Spruce St.

Townsend Disc Grinders



18"	$250.00
24"	325.00

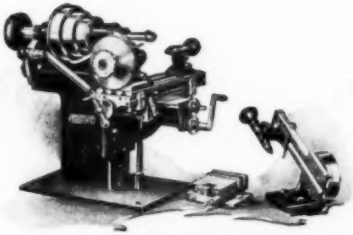
Charlestown Machine Co.

67 Walnut St., Fitchburg, Mass.

HARDINGE

Milling Economy!

With New Conveniences and a Wide Range of Feeds, This Miller Affords You Real Savings



Cataract Bench Milling Machine

MANY YEARS of practical experience taught the designers and builders of this Bench Miller just what ought to go into a machine of this sort. You will find it unusually useful, doing its work with precision accuracy, and having available a wide range of feeds for practically all jobs that come within its range.

Complete data and the interesting price gladly sent you on request

Hardinge Brothers Inc.
4149 Ravenswood Ave.
Chicago, Ill.

Full Automatic

Pointing, Champfering, and Drilling Machines

with hopper feed

Hoppers

for Centreless Grinders

Threaders—Slotters—
Drillers—
Bar Pointers—

A Symbol of Quality on Any Machine

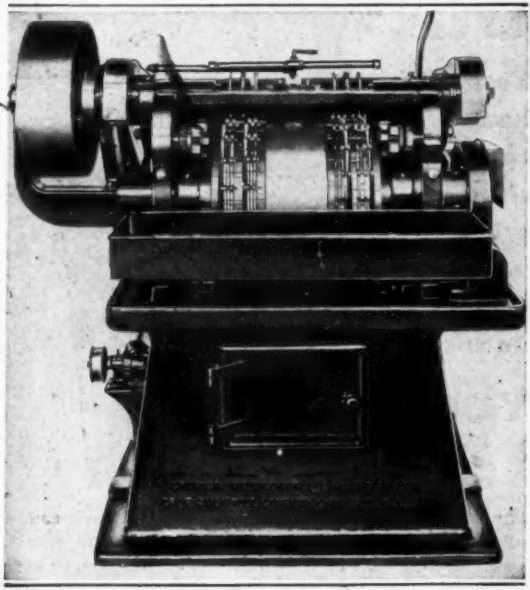
Cap Screw Pointers
and Shavers—Tappers—
Tool Grinders.

The KENT MACHINE COMPANY

CUYAHOGA FALLS, OHIO

The Craftsman Continuous Rotary Miller

Made in Three Sizes—No. 1, No. 2 and No. 3



For Castellating—Screw Slotting—Slab Milling
Straddle Milling—Plain Milling, Etc.

Let us have your blue-prints or samples of small parts to be milled, and we will be pleased to submit production rates.

Manufactured by

The Sommer & Adams Company

18511 Euclid Ave., Cleveland, Ohio

Just Out!

You should have a copy which shows what these unusual tools can do for

YOU

The PORTER-CABLE Universal Milling Attachments are made in 5 types, one of which surely can fit your requirements, no matter how rigid. You will find them a very handy and accurate device, valuable on fine, close die work, and a most profitable piece of machine shop equipment, being made with the same care and precision as are all PORTER-CABLE Products.

Send for your booklet today and learn more about this indispensable tool

Porter-Cable Machine Co.
Salina Street, Syracuse, N. Y.

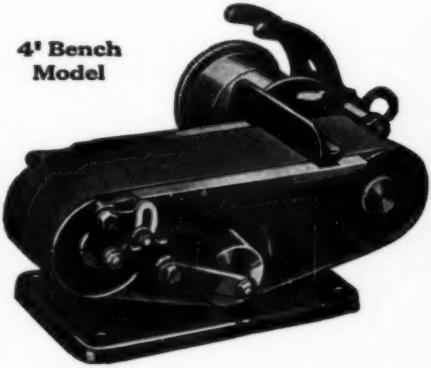
PEERLESS
SURFACING MACHINES

for

Grinding and Finishing

Flat Work

4' Bench Model



Larger Machines in Both Horizontal and Vertical Styles

SEND FOR FOLDER

PEERLESS SURFACING MACHINE CO., Inc.

TROY, N. Y.

Edlund Drilling Machines

Keep Costs Down

You will rarely find Edlund's name entered on maintenance record cards. Even in the grind of intensive production they run smoothly — producing operating hour after operating hour of satisfactory work.

One of the Newest

—the No. 2 B Column Type

is an easy running—sensitive accurate drill. It is equipped by special methods of power transmission—vibration elimination—friction minimizing and speed regulation—to fill the demands of modern production more profitably.

Let us mail you full mechanical details

Edlund Mchy. Co., Inc.

CORTLAND, NEW YORK

Put your drilling problems up to us

REMEMBER—

Edlund for drilling economy.

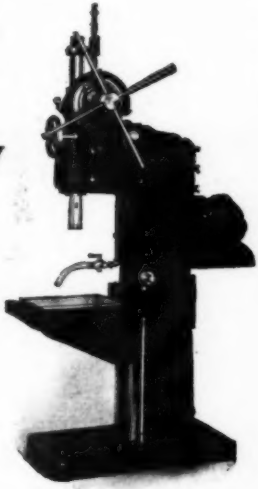
BARNES

PRODUCTION DRILLS

Power
Speed
Accuracy

General and Single Purpose

Belt and Motor Drive



Write for Circular

Established 1872

W. F. and John Barnes Co.

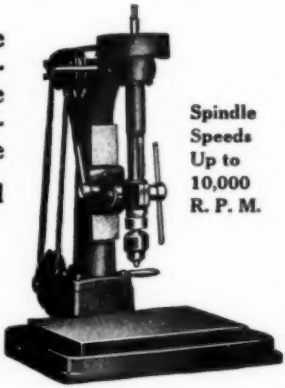
Rockford, Illinois

Don't Forget—

Wood, Fibre, Rubber, Paper, Mica, Bakelite

as well as the ordinary metals can be drilled to advantage on the

Leland-Gifford Super-High-Speed Ball Bearing Drilling Machine



Spindle Speeds Up to 10,000 R. P. M.

Write us about this Drill to speed up your drilling operations.

Ask for Bulletin No. 502

Leland-Gifford Company, - Worcester, Mass., U.S.A.

BRANCHES

BOSTON CHICAGO CLEVELAND
DETROIT NEW YORK
PITTSBURGH ROCHESTER

AGENTS

Hendrie & Bolthoff — Denver
F. E. Satterlee Company — Minneapolis
Colcord-Wright Mchy. & Supply Co. — St. Louis
Herberts Machinery & Supply Co. — Los Angeles, San Francisco
F. F. Barber Machinery Co. — Toronto

LELAND - GIFFORD

Avey
Get this book
before you do your
1927 tooling
—if not already using Avey Drilling Machines
Among the 20 sizes and types of Avey Drilling Machines you will find just the machine you want. Each is supreme in its class, backed by our absolute guarantee.
All-ball-bearing, automatic, semi-automatic or hand-operated—1 to 6 spindles—there's an Avey for every class of work and size of hole.
The Avey Drilling Machine Co.
Cincinnati, Ohio

FOOTBURT

A Single Spindle Footburt Sipp Sensitive Drill

Made in three sizes of single and multiple spindle models

More holes with this machine

Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

Write for No. 650 Folders

The Foote-Burt Company, Cleveland, O.

FOOTBURT

In Service for seven months

and the maintenance man didn't know a Demco was in the plant

In a prominent automobile plant, where continuous production is absolutely essential, the maintenance man hadn't heard of Demco after seven months of steady service.

There's nothing to go wrong and there was no need for the maintenance man to worry about equipment that didn't cause any trouble.

A perfect spindle—that in few words is mainly responsible for Demo Drilling Machine performance. If you want less drill breakage, closer accuracy and freedom from repairs on sensitive drilling, investigate Demco.

Demco-Bradford Unit Type Drilling and Tapping Head

A self contained motor driven unit designed for one or more heads to be built into one unit at any angle from horizontal to vertical position.

DEMCO DRILLS — Cleveland, Ohio

Division of

Merit Oil Equipment Co., Cleveland, Ohio

For Large Production Drilling In Small Parts of Varied Shapes

Wide adjustability of feeds and speeds.

Work is clamped and ejected automatically.

Both hands left free to handle work.

Stecher Automatic Universal Bench Drill

The number of holes that can be drilled in a given time on the "Stecher Automatic" is limited only by the capacity of the drill.

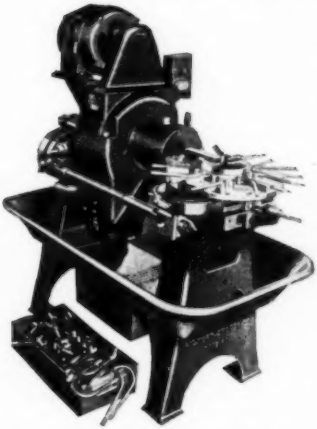
The wide adjustability of speeds and feeds; the automatic clamping, releasing and ejection of work; the control of feed by a slight knee pressure, leaving both hands free to handle work—these are some of the features that make the "Stecher" such ***a remarkable producer at bed-rock cost.***

The mere pulling of a lever changes the "Stecher" from an automatic production tool with power feed into a high speed drill press with sensitive hand feed. We can also furnish dial, rotary or magazine feeds to suit conditions.

Write for folder, which gives the complete description
Also send us samples of your small parts to be drilled

The Chas. Stecher Co., 2452 N. Greenview Ave., CHICAGO, ILLINOIS

Adjustable to almost Every Job of Threading



The Rickert Shafer Automatic Single Purpose Threading Machine

This machine can be adapted to almost every job of threading, from the simplest to the most complicated. Combination tools can be supplied so that chamfering, reaming, facing etc., can be done simultaneously with the threading and with but one chucking. Roller bearings are used for the spindle sleeve; bronze for other vital bearings; has individual motor drive; built-in pump for circulating coolant, with generous sized reservoir for holding same.

The R-S Machine is practically the only automatic threader which will maintain the accuracy demanded by automobile manufacturers, and is backed by a company whose personnel comprises men who have specialized on thread cutting only for over 35 years. Experience has taught them to produce threading equipment which will give REAL SERVICE.

Detailed Information Gladly Furnished. Write Today.

RICKERT-SHAFER CO., Erie, Penna.

Champion Tool Holders
SAVE
Expensive Tool Steel

High Speed Tool Steel is brittle; the more bearing, the less breakage. The under support gives 40 to 70% more bearing for the cutter than any other tool holder. The CHAMPION Holder saves the tool.

Patented

CHAMPION
Tool Holders are made of drop-forged steel, thoroughly case-hardened, and are equipped with an unbreakable "Mac-it" set screw.

Patented

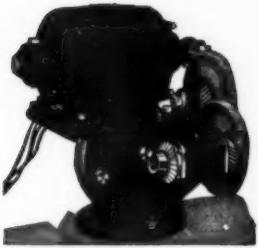
Champion Boring Tool

This tool is indispensable for inside threading and boring. Takes any length of cutter, which may be used down to short lengths. Cutters, drills, reamers, taps and many other tools can be used in this Holder.

Let us tell you more about our Turning Tools, Boring Tools, Planer Tools, Cutting-Off Tools, Threading Tools, Grooving Tools and the Champion Drill Holder.

Write for New Catalog and Price List

The Western Tool & Mfg. Co.
Springfield, Ohio



Accurate Threads!

A certain manufacturer of machine tools was in need of a tool for cutting accurate threads at a minimum cost. To have purchased a special thread milling or chasing machine would have been false economy for this particular job. We solved their problem by designing the CISCO LATHE THREAD MILLING ATTACHMENT.

This attachment, very simple in design, and sturdy in construction, can be mounted on any standard cone head lathe by removing the compound rest. It will cut threads of any length, and up to four pitch.

On long threads, it is very economical as the operator can set up the job, and then work on some other machine nearby, thus reducing the labor cost on long threading operations. After the job is set up and started, it requires no further attention until the length of thread, as desired, is cut.

On small parts, having a short thread, the set up time for this machine, is not as great as the set up time for chasing threads on a lathe, Taking this fact into consideration, the time required in and out of the lathe is not as great as the time required for setting up and chasing threads on a lathe. In these cases the attachment effects a real saving in time.

Let us know what particular threading problem confronts you, we will be able to help you, as we have helped many others.

The Cisco Machine Tool Co.

1700 Elmore Street, Cincinnati, Ohio

No. 7 Roller Bearing Punch

Capacity ¼-inch through ⅛-inch.

Weight, 6½ lbs.

No. 8 Imperial Punch with Base

Operating handles will not become disengaged.

CAPACITY—¼" hole thru ¼" iron.

Weight, 16 lbs. Length over all 25½".

Can Be Furnished With or Without Base

No. 12 Ball Bearing Punch

Capacity ⅜-inch through ¼-inch iron
Weight, 11 pounds.

Will punch channels up to 4 inches. Drop forged, heat treated throughout. Sets rivets as well as punch holes.

Write for catalog and price list on entire line

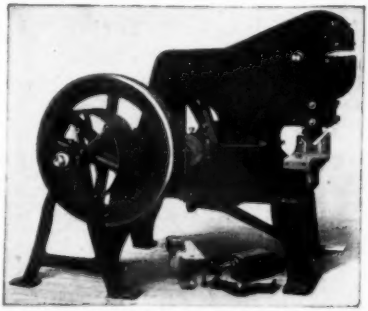
WHITNEY METAL TOOL CO.

95 Forbes Street, Rockford, Illinois

Punches—Shears—Bending Rolls

The Beloit

Combined Power Punch and Shear



Built in seven sizes. Nos. 51, 52, 53, 54, 55, 55½ and 56

Direct connected motor or belt drive

This is the best all around punch and shear in a combined machine of moderate cost. It is heavy and substantial, and amply back geared to require the minimum amount of power; is strong, compact, and easy to operate. Can be equipped with angle shearing attachment, architectural jaw, or for special work.

We make a complete line of punching and shearing machinery in both power and hand tools, also light and heavy duty bending rolls.

We do not overrate the capacity of our machines.

Write for catalog and prices.

Hendley & Whittemore Co.

100 S. State St., Beloit, Wis.

Accurate—Rapid

Shaping and Slotting with the RHODES

The Rhodes Combination 7" Horizontal Shaper and 3½" Vertical Slotter—two machines in one—is a paying investment from the start. A few turns of a wrench converts the Rhodes into either an efficient shaper or a fast, accurate slotter.

It will do keyseating, shaping, slotting, die making and intricate work of many kinds *with only one set-up of the work*, and, within its range, will exceed the capacities of larger and more expensive single operation machines. The costs of maintenance and operation, of course, are substantially less. It will pay you to investigate.

Ask your dealer or write for
CATALOG H22

The Rhodes Mfg. Company

944 Park Road, -:- Hartford, Conn.

"The Handiest Tool in the Shop"

7 in. Shaper Stroke

3½ in. Slotter Stroke

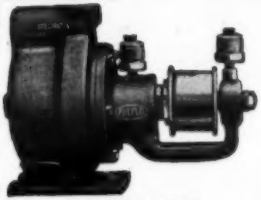
SHAPERS—RHODES—SLOTTERS

MARTINDALE ELECTRIC CO.

1264 West 4th St., Cleveland, Ohio

Please send me my copy of your New Catalog No. 9, showing eleven types of Motor-Driven Undercutters and Slotters;

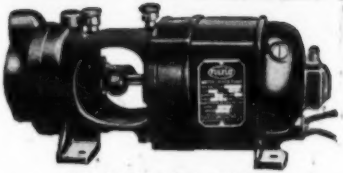
11-27



GRINDER PUMP

FULFLO

VOLUME PUMPS



MOTOR DRIVEN UNITS
⅛ to 5 H. P. 5 to 75 G. P. M.

FULFLO delivers coolant in volumes which promotes efficiency in cutting tools.

The full, copious flow from the Fulflo is needed to make the best tool, with the best coolant, most effective.

FULFLO does not clog, therefore it always works. It's the trouble proof pump.

No machines stopped to unclog pump. All the chips you can get into it pass through without harm.

FULFLO has longest life because its only pumping part does not wear.

MANUFACTURED BY

FULFLO SPECIALTIES CO., BLANCHESTER, OHIO

Gusher Pumps

Model T-L-O is shown above. Equipped with ¼ h. p. motor, has ¾" inlet and is set vertically outside of pan. Delivers 18 gal. 3' high: 13 gal. 6'; 10 gal. 9'; 8 gal. 12'; 3 gal. 20'.

Model T-L is identical in capacity and equipment save that it is immersed in the reservoir and is able to pump over 20' high through ½" discharge with 10 lb. pressure. Ideal for deep hole drilling or boring.

Eliminate

Packing Nuts

Foot Valves

Relief Valves

Priming

Friction

Through the elimination of the above items the GUSHER PUMPS stand the constant wear and tear of time. The deteriorating effect of friction is done away with through the use of ball bearings which are absolutely immune from the action of the lubricant through perfect hydrostatic balance. The menacing effects of grit, dirt and small chips are absent—they pass through without injuring the machine in the least.

The performance of GUSHER PUMPS is the best evidence of their superiority and perfection.

GUSHER PUMPS are built to outlive the machine they serve. They are made in many styles and sizes, of all desirable capacities, with individual motor or belt drive. Can be furnished, if desired, to set outside reservoir and connect by piping.

Send for Catalog showing the entire GUSHER Line

The Ruthman Machinery Co.

528 East Front Street, Cincinnati, Ohio

35% Saved!

Net Wt. 51 Lbs.

On less than 1000 of these forgings one customer saved $2475.00 in material cost. He saved the paying of unnecessary freight and the machining of unnecessary stock, as our product was held closer to the finished sizes.

AMFORGE

This great saving in material alone was the result of changing material specifications from "cast steel" to "AmForge."

Our engineering department is at your service. Its advice on designs for upset production has saved thousands of dollars in labor and material for our customers.

Send for Booklet

American Forge Co.

2635 So. Hoyne Ave., Chicago, Ill.

Taylor & Fenn Belt Driven

No. 12 Spring Press

UNIFORM BLOW SPRING PRESSES

Are made in three sizes, with either single or double action

Our No. 12 Belt Driven Spring Press, illustrated above, has a stroke of 3¼ inches. The foot treadle operates a safety clutch attached to the flywheel, which automatically stops the machnie after each stroke regardless of whether the treadle is released or held down by the operator. The clutch can be adjusted for a continuous stroke if desired.

Descriptive circular gladly sent upon request

The Taylor & Fenn Co.

Hartford, Conn., U. S. A.

They welcome gruelling service

3 Sizes

Taylor-Winfield spot welders, butt-welders, portable welders, seam welders — all are built by specialists!

The Taylor "N" is especially designed for gruelling service. Hour after hour these heavy duty machines produce more welders more economically and speedily!

No matter what your welding problems, put them up to Taylor-Winfield!

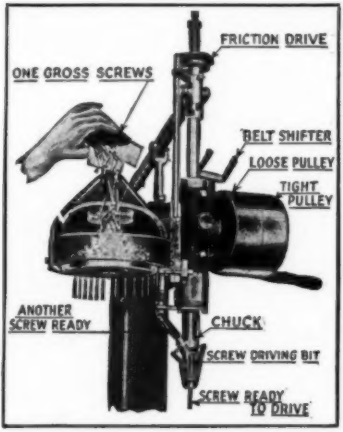
Write us for details on complete Taylor-Winfield line

THE TAYLOR-WINFIELD CORP.
WARREN, OHIO

TAYLOR-WINFIELD WELDERS

Spot, Butt, Seam or Portable

Magazine Feed Screw Driving Cuts Costs



Showing Magazine Feed of the Reynolds Automatic

Magazine Feed Screw Driving Pays handsome dividends, as users testify. Just dump a gross of screws into hopper—the machine does the rest (see illustration). Operator has both hands free to handle work. Drives screws so accurately many users have been able to reduce their screw sizes. If you are not using the REYNOLDS you are overlooking a chance to materially reduce your screw driving costs.

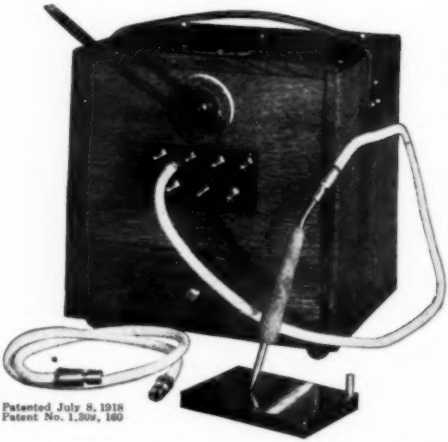
Investigate Now—just drop us a line giving dimensions over all of your work and the length and gauge of screws used. We will send facts and figures that will surprise you.

Write today

The Reynolds Machine Company
Dept H. H., Massillon, Ohio

Etchograph

Trade Mark



Patented July 8, 1918
Patent No. 1,309, 160

The ETCHOGRAPH—the original electric marker—regulates the current for marking fine tools or heavy work, giving six variations in size of marking, ***the only machine that has this number of stages of heat.***

Easy to operate. Just fasten to light socket and write as with a pencil. No acids—no preparations before or after using, thereby giving you a four-fifths saving in time alone over other methods.

Write for descriptive folder, stating power available.

William Brewster Company

50 Church St., New York

Westinghouse Uses 34 Rarefieds

Such recognition must be earned!

Only after long trial and careful testing could the "Rarefied" be singled out for such distinction, but when you stop to consider the features that make for its superiority, this recognition seems well deserved.

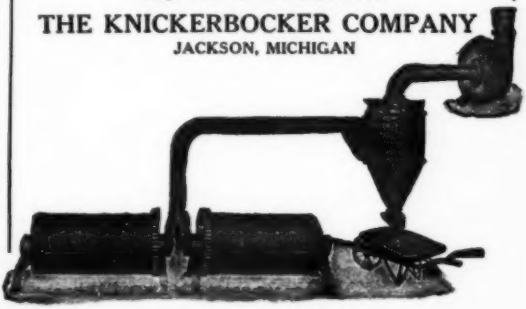
It operates on a partial vacuum principle that automatically collects and discharges all heavier than air dust.

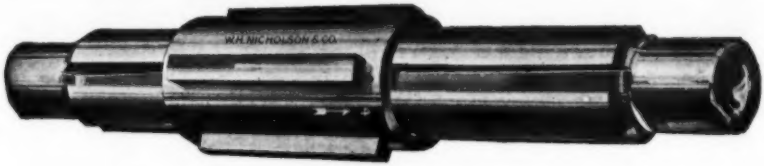
It is so designed that screens are obviated. There can be no clogging; and no need for hand cleaning.

As the suction is constant, there is no friction; accordingly repair costs are held at zero, and a 40% power saving is often affected.

Let us send you a list of big users—they can tell you from actual experience.

THE KNICKERBOCKER COMPANY
JACKSON, MICHIGAN





A mandrel is in reality an internal chuck. You wouldn't want to do without a lathe chuck; then why continue operating without expanding mandrels in your shop.

A letter or card will bring you complete information

W. H. Nicholson & Co., 117 Oregon St., Wilkes-Barre, Pa.

Stop Wasting Time and Money

Use

HYRO
SHUR-GRIP
FILE HANDLES

(Patented July 12, 1921—No. 1,384,154)

They
Screw On and STAY ON

Standardized and Used in Shops where Economy and Efficiency are Practiced.

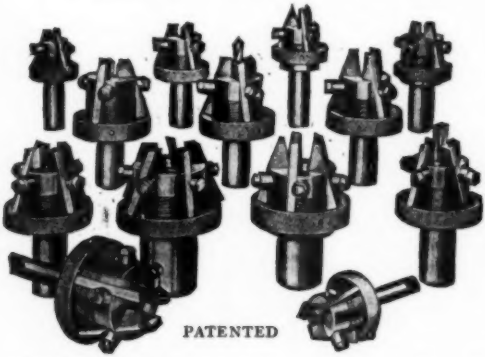
Carried in stock by Leading Jobbers

HYRO MFG. CO., Inc.
351-361 West 13th St., New York, N. Y.

HYRO
PRODUCTS
"Speed Up Production"

Genesee Hollow Mills

With Adjustable Replaceable Blades Are Productive, Accurate, Economical



PRODUCTIVE—because their seven sizes cover the entire range from 1/8" to 2", and machine all sizes within their capacity to 1000ths of an inch.

ACCURATE—because the hollow mills cannot change in size or clog with chips as do solid tools. They can be ground to any angle required to point work or turn sharp tapers.

ECONOMICAL to buy, because one Genesee Hollow Mill covers several sizes—economical in upkeep, because they outlast from five to seven ordinary tools; then too the blades are replaceable at a small cost—economical in operation, because they give a maximum efficiency, cutting up to 15" a minute in steel, or to capacity of machine.

Send for detailed information

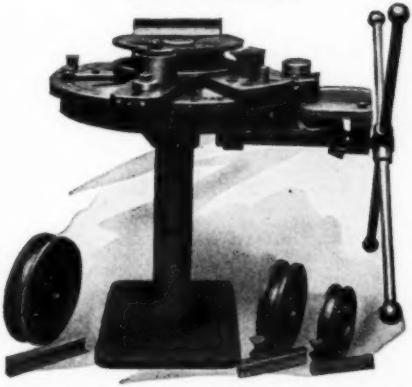
Genesee Manufacturing Co., Inc.

141 North Water Street, Rochester, N. Y.

Manufacturers of Genesee Rapid Production Tools. ***Est. 1908***

A New Horizontal Pipe Bender

By PEDRICK



Universal satisfaction for the past 20 years has been the keynote of our success with bending pipe.

Recently we have made ***two*** radical departures, viz., the horizontal table and the improved bending principle, which offers decided advantages in ***Time-saving, Convenience*** and ***Superior Work.***

Iron, steel, galvanized and copper pipe are bent cold and unloaded on the radii of the rolls. For 2" and under.

We have a Bulletin awaiting for you.
SEND FOR IT NOW.

Pedrick Tool & Machine Co.
3644 N. Lawrence St., Philadelphia, Pa.
Manufacturers of Cylinder Boring Bars, Portable Millers, Crank Pin Turning Machines, etc.

Strand

New Type Machine
For
Rotary Filing Grinding and Polishing

Type RF-M 4. ¼ H. P.

For
Die Makers
And
All Kinds of Metal Finishing
Of
Various Shapes and Sizes
A Machine—
For
Many Purposes

Attach to the Lighting Circuit

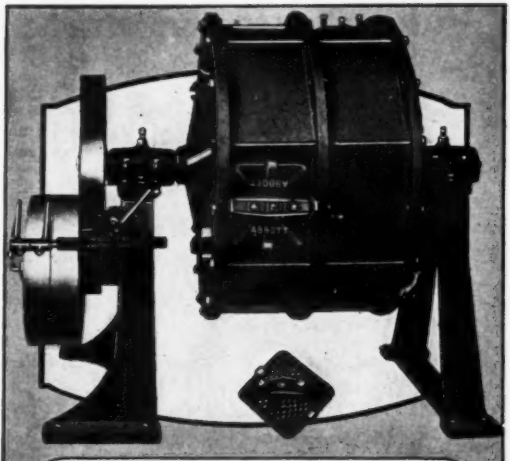
Attachments

EQUIPMENT

Ball Bearing Hand Piece.
8 Assorted Rotary Files.
9 Assorted Grinding Wheels.
1 Rubber Polishing Drum.

Machine Complete as Illustrated

N. A. STRAND & CO.
Manufacturers
5001 No. Lincoln Street
CHICAGO



The finer the finish —the quicker the sale

Fine finish is a mighty big sales argument. Ball Burnishing by the Abbott Method insures fine finish.

You can finish your parts in quantity, thus practicing the highest economy.

Let us tell you about the Abbott Burnishing Method—how well it will work to your advantage from every angle.

Send us samples to finish without obligation to you

THE ABBOTT BALL COMPANY

"Originators of Commercial Ball Burnishing"

1043 New Britain Ave., Hartford, Conn.

"Vulcan" Electric Brazer

For Band Saw Blades and Similar Flat Work

For Saw Manufacturers and Users of Band Saws

TWO SIZES:
No. 1 Capacity up to 1½"
No. 2 Capacity up to 3"

No open flame, no danger of fire, no formation of scale on saw blade.

Can be connected to any 110 or 220 volt, a. c. More than 100 brazings effected by 1 k. w.-hour.

Send for circular

Vulcan Electric Brazer & Welder Co.

109 East 17th Street, PATERSON, N. J.

Threading Tool

Right Hand Off-Set Side Tool

Right Hand Turning Tool

ARMSTRONG Tool Holders

They Save—

High Speed Steel, 90%
Grinding, ------ 70%
Forging, ------100%

Over 100 tools for Lathe, Planer, Shaper, Slotter, etc., etc.

Get the free Catalog

Armstrong Bros. Tool Co.

"The Tool Holder People"

308 N. Francisco Ave., Chicago, U. S. A.

SALVAGE

YOUR

Hack Saws

HARD TEMPERED
METAL CUTTING

Band Saws

MILLING, SLITTING AND SCREW SLOTTING SAWS

IT COSTS **2¢** *To Sharpen A Hack Saw* **5¢** *A Band or Circular*

MAIL TO US
two saws and we will resharpen them for you
FREE OF CHARGE

REDUCE YOUR SAW PURCHASES

90%

SAVE TIME AND SAVE MONEY

Write for Catalog

THE WARDWELL MFG. CO.

Makers of automatic machines for sharpening—Hack Saws, Hard Tempered Band Saws, Milling, Slitting and Screw Slotting Saws and all Woodworking Saws

Manufacturers of the largest line of Saw Filers made in U. S. A.

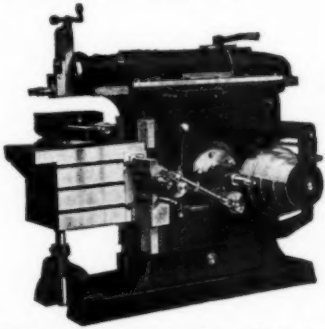
108 Hamilton Ave., Cleveland, Ohio

SHAPERS

12", 14", 16" Plain Crank, 16", 20", 25" B. G. Crank, either Cone Driven or through Speed Box.

Belt Shifter Regular Equipment All Cone Driven Shapers.

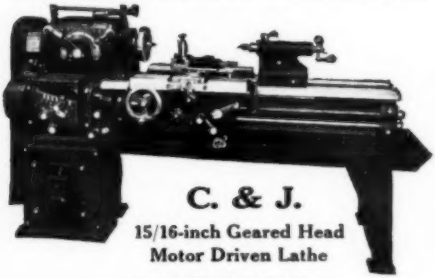
32" Back Geared Crank, Single Pulley Drive.



The Smith & Mills Co., Cincinnati, O., U.S.A.

12 Spindle Speeds—

And other features for modern needs.



C. & J.

15/16-inch Geared Head Motor Driven Lathe

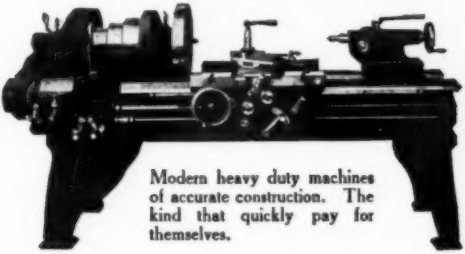
Ask for further details

Carroll & Jamieson Machine Tool Co.

Batavia, Ohio

HAMILTON Rapid Production

Lathes—Planers—Vertical Drills



Modern heavy duty machines of accurate construction. The kind that quickly pay for themselves.

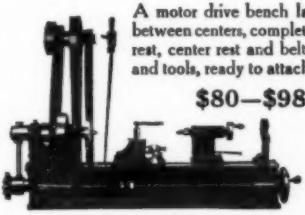
Write us regarding your needs

The Hamilton Tool Company, Hamilton, Ohio

Live Agents Wanted In Open Territory

Just-Rite Lathes

Made in Sizes from 10-in. to 20-in.



A motor drive bench lathe, 10" swing, 24" between centers, complete with motor, swivel-rest, center rest and belting, including chuck and tools, ready to attach to your light socket.

$80—$98—$125

JUST-RITE for turning, boring, milling and drilling (not screw cutting.)

Has Power Feed

Order one by express. Weight, 230 lbs.

A. V. Carroll Machine Tool Co., Norwood, Cincinnati, O.

Bar Stock Racks

Steel Column, Adjustable Arms

Can Not Tip Over.

CAPACITY:—All the steel that you can pile on.

Tool Stands

You will be surprised at the low cost of this Tool Stand

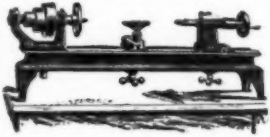
Made by Mnfrs. of Shop Equipment

Get our Catalogue

Pollard Bros. Mfg. Co.

4038 N. Tripp Av. Chicago, Ill.

Bench Speed Lathe



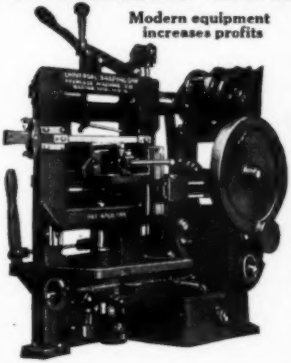
Swing—8"
Length of bed—3'
Distance between centers—20"

Write for Catalog No. H21 and prices

The W. W. Oliver Mfg. Co.

1495 Niagara St., Buffalo, N. Y.

—PEERLESS—
UNIVERSAL SHAPING SAW



Modern equipment increases profits

Different Principles
Greater Efficiency

Give The Most Of—

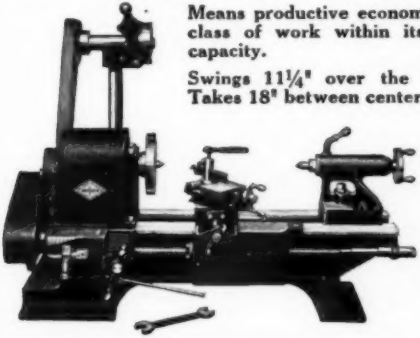
Speed
Accuracy
Blade Economy

SIZES:
6"x6"--9"x9"--13"x13"

PEERLESS
HIGH SPEED HACK-SAWS
6"x6" 9"x9" 13"x16"
Sturdy--Efficient--Reliable

Peerless Machine Co.
1218 Sixteenth St.
Racine, Wisconsin
Write for Details

The "ARTISAN" 11"x3' Bench Lathe!



Means productive economy on any class of work within its unusual capacity.

Swings 11¼" over the ways—Takes 18" between centers.

Write Today for Full Details and Price.

Artisan Manufacturing Company
837 Hathaway Street, Cincinnati, Ohio

E-Z THREAD DIAL

Thread cutting on engine lathes made easy, and at lower cost. Made in four sizes. Can be easily attached to all size lathes. A reliable device that will aid the operator in the work of cutting threads. With it threads can be cut close up to shoulders as easily as the ordinary thread.

Eliminates stopping or reversing the lathe.

The many repeat orders received prove it is satisfactory after trial.

Can be shipped within two days after receipt of order.

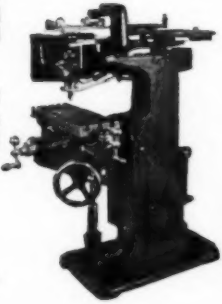
Sent on thirty days' trial. Send for latest folder today.

JAMES M. COLVEN, 20 Wolffe Street, Yonkers, N. Y.

Universal Die Sinking and Engraving Machines

designed to save time and money on the production of light and heavy dies, molds, stamps and general engraved work—

in brass, steel or cast iron. Built by a firm having over thirty years of experience, having equipped many prominent work-shops.



Catalog sent on request

George Gorton Machine Co.
Racine, Wisconsin

IXL GEARS

All Sizes and Types for Every Requirement

send for 660 Page Catalog "Gear Problems"

FOOTE BROS. GEAR & MACHINE CO.
229 N. Curtis St., Chicago

over 60,000 different patterns

your "special" Problem may be a Standard one with us

MG

MASSACHUSETTS GEARS MAKE GOOD

ALL TYPES:
Spurs, Internals, Bevels, Mitres, Helicals, Spirals, Worms, Worm Gears, Sprockets, Ratchets.

ANY MATERIAL:
Steel, Cast Iron, Brass, Bronze, Aluminum, Fibre, Bakelite, Rawhide.

Made in Small and Medium Sizes, all of One Quality—the very best. We also carry a full line of Stock Gears for immediate delivery. *Write us.*

MASSACHUSETTS GEAR & TOOL CO.
36 Nashua St., Woburn, Mass.

GEARS

All Kinds—Small

The most accurate made and prices reasonable. We carry a coinplete line of gears in stock for immediate shipment. Can also quote on special gears of all kinds. Send us your inquiries.

Write for Catalogue No. 70

CHICAGO STOCK GEAR WORKS
105 South Jefferson Street, Chicago, Ill.

OLIVER OF ADRIAN

Die Making Machines

save an average of 50%

Dies, templets, experimental parts, gages and the like can be sawed, filed and lapped on the Oliver of Adrian Die Making Machine much easier, more accurately and in a fraction of the time ordinanly required for handwork.

We also manufacture a line of

Point Thinners.
Drillpointers.
Profilers.
Cutter Grinders

Send for Bulletins

Oliver Instrument Company, 1408 Maumee St., ADRIAN, MICH.

Curtis Universal Joints

of Simple, Rugged Construction

Send for Catalog No. 47

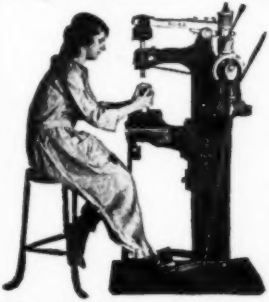
BOSTON GEARS

BOSTON GEAR WORKS SALES CO.
Norfolk Downs, Mass.

BOSTON NEW YORK PHILADELPHIA CLEVELAND CHICAGO

High Speed Riveting Hammers

(Patd.)



Cold Riveting
1/64 to 1½" in diameter

Write for Catalog "C"

SEND SAMPLES
to be riveted and returned with complete production data.

The High Speed Hammer Company, Inc.
311 Norton St., Rochester, N. Y.

TRY us on your **Difficult Riveting Job**

We have solved the riveting problem for many manufacturers, who thought hand riveting was their only way out, until they investigated the "GRANT," which does their work better and at much less cost.

"GRANT" Noiseless Rivet Spinning Machines and Rotary Vibrating Riveters cover all classes of work, including awkward pieces and riveting in out-of-the-way places.

Tell us what your work is or send samples for riveting

The Grant Mfg. & Machine Co.
C. E. Station, Bridgeport, Conn.

Vanderbeek Universal Joints

—represent the practical refinements of 25 years experience in manufacturing Universal Joints. All parts are generous sized, fully protected against dirt, and are practically self-oiling. Exceptionally strong, they transmit full power up to 70°.

Vanderbeek Joints are in daily use on thousands of machines.

Write today for our Descriptive Catalog.

American Tool Works, Inc.
Hartford, Conn., U. S. A.

Let Us Worry

with some of those mechanical problems

Special machines designed for reducing manufacturing costs. Large or small. We supply complete designs, working drawings and specifications for special machines for any purpose. We can arrange for building and supervising the construction of such equipment. Wide experience in development work.

W. L. Schellenbach, Eng.,

611 Second National Bank Bldg.,
CINCINNATI, OHIO

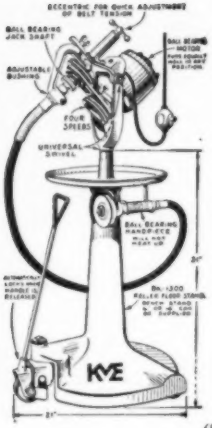
Save Money on Hollow Bored Forgings

Or on Steel Shafts for Lathe Spindles, Piston Rods, Rams, Clutch Shafts, Hydraulic Cylinders, etc., by specifying "AMERICAN." Uniformly excellent quality, close approach to finished dimensions, fair prices and prompt delivery are some of the reasons for the satisfaction experienced by users of American Hollow Bored Forgings.

Send us blueprints for estimate

American Hollow Boring Co.

Erie, Penna.



Keller "BK"

"The Machine of a Hundred Uses"

¼ — ⅓ — ½ — H. P.
SPEEDS UP TO 10,500

Non-Heating Shafts
Ball Bearing Handpieces

FILING— GRINDING—
POLISHING—DRILLING—
ETC.

Tell us your problems

Keller Mech. Engineering Corp.,
58A Washington St., Brooklyn, N. Y.

(See Page 73)

Getting Light on the Subject

is EASY with an
AUTEX Extension Reel

It goes wherever you want or need it. Saves time and eyes, speeds up work and quickly pays for itself. Indispensable during the winter months.

ORDER NOW!

Approved by the Underwriters

Now equipped with Belden Rubber Cord

Write for descriptive circular and the low price

The Cincinnati Specialty Mfg. Co., Inc.
1903 Powers St., Cincinnati, Ohio

Setting New Standards of Performance in the Flexible-Shaft Field

REPLACEMENTS

COMPLETE SETS

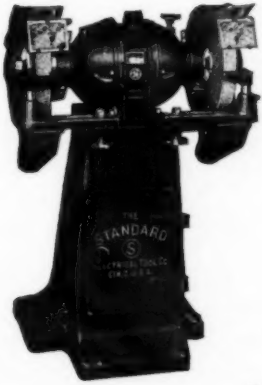
MALL Flexible Shafts

WHY? **Wear Longer**
Carry More Power
Run More Smoothly

—Write for Full Information and Prices

Mall Tool Company, 7740 So. Chicago Ave., CHICAGO, ILL.

Standard Ball Bearing Grinders



Made in sizes from ¼ H.P. up to 10 H.P.

Tool Post Grinders
¼ to 2 H. P.

Polishing and Buffing Lathes
¼ to 15 H. P.

Aerial or Hand Grinders
¼ to 3 H. P.

Bench Grinders and Buffers
¼ to 2 H. P.

Drills—¼" to 1½".

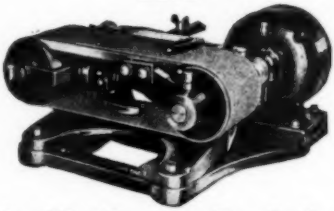
Send for Catalog

The Standard Electrical Tool Co.

1948 W. 8th St.,
CINCINNATI, OHIO

Abolish Expensive Hand Finishing

with a



Simplex-M Abrasive Band Grinder

This Grinder accelerates production and cuts costs. Hand emerying or filing operations are antiquated in comparison. The use of this new modern machine assures straight grain finishes with sharp edges. *Details of this and other styles and sizes on request.*

WALLS SALES CORP., 96 Warren Street NEW YORK

"D & W" Flat & Rotary Magnetic Chucks

Have Proved Time and Labor Savers

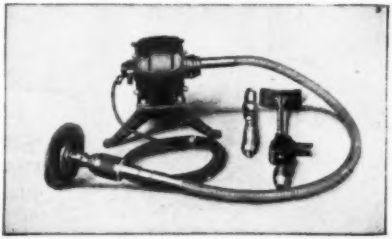
D. & W. Magnetic Chucks hold a great variety of iron and steel pieces for grinding, milling, planing and shaping operations. By the effective way they serve you, they soon pay for themselves. We specialize in problems dealing with the use of flat and rotary magnetic chucks. Let us investigate any question which is confronting you.

Special chucks to order. Folder and price list on request.

J. & H. Electric Co., 161 Clifford St., Providence, R. I.

The Whirlwind Buffer and Grinder

Will cut the cost on any unhandy grinding or polishing job



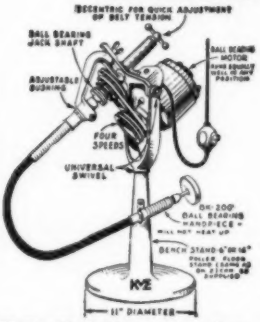
Send for our latest bulletin

Stow Flexible Shaft Co., 3454 Ludlow St., Philadelphia, Pa.

The Best Since 1876

Keller "BK" Flexible Shaft Grinder

"The Machine of 100 Uses"



¼—⅓— ½H. P.
Speeds up to 10,500

COMPLETE LINE OF ACCESSORIES

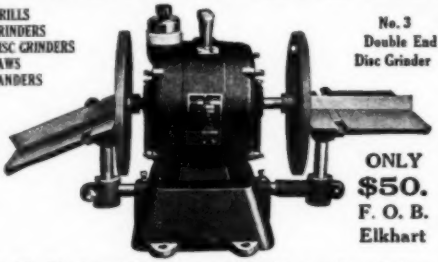
Rotary Files—
Emery Wheels—Sanding Drums—
Wire Brushes, Etc.

Keller Mech. Engineering Corp., 58A Washington St., **Brooklyn, N.Y.**

(See Page 70)

Winterhoff Motor Driven Portable Tools

DRILLS
GRINDERS
DISC GRINDERS
SAWS
SANDERS



No. 3
Double End
Disc Grinder

ONLY
$50.
F. O. B.
Elkhart

The No. 3 has been designed to meet a demand for a medium priced machine that would furnish a true flat grinding surface, and would stand up under any usage. Its sturdiness, accuracy and handiness are unsurpassed.
Write today concerning Winterhoff Portable Tools.

Winterhoff Tool & Machine Co., 109 South Elkhart Ave., ELKHART, IND., U.S.A.

Etco Keyless Ball Bearing Drill Chucks

Now Made With

Holding Collar for Electric Drills and Portable Tools.

Can be furnished with any Thread or Taper to fit your Drills.

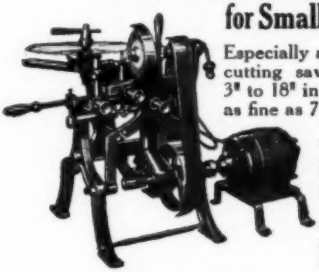
Shipped on 10 days' trial

Chuck with Holding Collar

Eastern Tube & Tool Company, Inc.
600 Johnson Avenue, BROOKLYN, N. Y.

AT LAST—

A Low Priced Automatic Grinder for Small Milling Cutters



Especially adapted for light metal cutting saws or milling cutters 3" to 18" in diameter, with teeth as fine as 7 points to the inch.

Automatic in operation—

Simple in construction—

Belt or Motor drive—

Equipped with 3 aloxite redmanal grinding wheels for extra fine grinding.

Write for details and prices

SAMUEL C. ROGERS & CO., 211 Dutton Ave.. Buffalo, N. Y.

Thompson Universal Grinder

Does accurate, economical grinding, whether

Plain
Surface
Edge
Die
Cutter
or
Internal

as efficiently as a single purpose machine.

Write for bulletin

The new coarse cross feed for surface grinding—now ready

THE THOMPSON GRINDER CO., - Springfield, Ohio

In Spite of Precautions Taps Break in the Hole

That's bad enough—but the real expense comes in stripping the threads when you remove the broken tap.

The Walton Tap Extractor

offers an effective, instantaneous way of overcoming this loss. Its steel fingers inserted in the broken tap remove it intact. An apprentice can operate it!

Made in three and four-flute styles

Often pays for itself in the 60 day trial allowed

The Walton Company

302 Pearl St., Hartford, Conn.

Combined Truck and Hoist—

"CanTon Portable"

You can easily figure the saving it effects—one man with a CanTon does the work which ordinarily takes 6 to 10 men.

CanTon lifts any shape or size piece, weighing up to 6000 pounds, ***moves*** it anywhere about the shop, ***and places it*** where you want.

Safety friction brake holds the load at any point, insuring safety to the operator and work.

Made in several sizes

Write for booklet E-8

CANTON FOUNDRY & MACHINE CO., Canton, Ohio

New York Office: 101 West 31st Street

Made in 6 Sizes for Balancing Anything That Revolves up to 24000 lbs.

Anderson Improved Balancing Ways

Require no leveling or adjustment. They are especially sensitive! Spindles and discs are hardended like the frame—they cannot lose their effectiveness or become injured by use.

"Swing"	20"	40"	60"	72"	96"	72"
Greatest distance bet. standards	20"	30"	30"	66"	88"	20'
Capacity in lbs.	1000	2000	2000	5000	10000	24000
Approx. shipping weight	45	90	150	350	650	
Code	Bend	Bid	Bis	Bib	Bes	

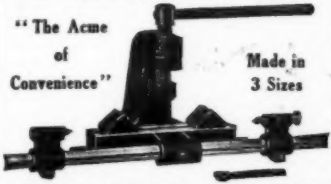
Any of above can be furnished with longer shafts

Anderson Bros. Mfg. Co.

1915 Kishwaukee St., Rockford, Ill.

The Springfield Straightening Press

"The Acme of Convenience"



Made in 3 Sizes

Invaluable in the tool room, also for straightening crank and cam shafts and other automobile parts.

A GREAT LABOR SAVER, as you will find the arrangement of this Press makes it the very *acme of convenience.*. Any work within the range of centers may be tested and straightened without unneccessary walking from press to lathe each time in straightening rough or finished work. Any length, however, may be operated upon. Of "Springfield Quality" thruout.

Write for folder illustrating many of its uses

The Springfield Machine Tool Company

633 West Southern Avenue, SPRINGFIELD, OHIO

We also manufacture Engine Lathes and Shapers

"WEAR-EVER"

Self-Aligning Reamer Holders

For Screw Machines—Turret Lathes—Drill Presses

COMPENSATES for all irregularities in machine alignment. Reamer can float to one side, at the same time swing on an angle in any direction to align itself with the work.

THESE HOLDERS are made in five standard sizes for reamers up to 3" diameter. Adaptable to any style machine drive or reamer shank.

ORDER ONE ON APPROVAL

Get our Small Tool Catalog No. 35 for details

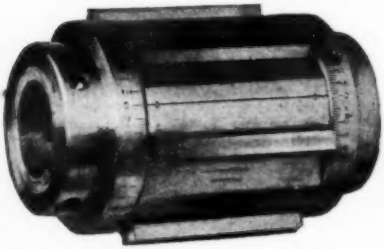
SCULLY-JONES & CO., *TOOL DIVISION*
2010 W. 13th Street, CHICAGO, ILL.

Representatives and Local Stocks

CLEVELAND, OHIO, - Cleveland Tool & Supply Co., 1427 W. Sixth St.
DETROIT, MICH., - Gross & Heming, 704 Detroit Savings Bank Bldg.
NEW YORK CITY, - - L. C. Biglow & Co., Inc., 250 W. 54th St.

Lambert Reamers—

With Standard Bores to Fit Your Boring Bars



Made in styles and sizes to fit your requirements.

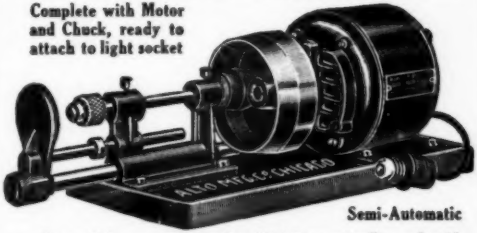
Fitted entirely with High Speed Blades.

The 5 in. Tool shown expands 1 in. They all afford quick, accurate setting, and will reduce your costs. Send for prices and catalog.

Lambert Machine & Engineering Co.
Euclid Ave. and 55th St., Cleveland, Ohio

No. 1 ALTO High Speed Motor Driven Tapping Machine

Complete with Motor and Chuck, ready to attach to light socket



Semi-Automatic

Its superiority rests on three points. (1) it is exceptionally speedy with a reverse three times as fast; (2), it comes to you fully equipped, and ready to attach to the light socket; (3), it is designed with such convenience and simplicity that it sells at a lower price, and operates at a lower cost.

We also make large motor driven tappers.

Let us send you descriptive matter and quote the price

The Alto Mfg. Co., 1647-51 Wolfram St. Chicago, Ill.

Announcing!

A New Size Ettco Tapper

"Sensitive as your Finger Tips."

No. 1 Ettco Tapper—capacity ¼-inch.
No. 2 Ettco Tapper—capacity 5/16-inch.
No. 3 Ettco Tapper—capacity ⅜-inch.

No. 3—Capacity 0 to ⅜"

Anything that can be tapped by hand can be tapped with an Ettco tapper. The Ettco taps blind holes as easily as those which go through—and it eliminates broken taps.

There is no friction to adjust in the Ettco.

Production increased 100% to 500% on many jobs.

Don't condemn the taps you are using; try an Ettco tapper for ten days without obligation.

Eastern Tube & Tool Co., Inc., 600 Johnson Ave., BROOKLYN, N. Y.

Always Ready for Service—

Our Stock Room Service is complete. We can fill all orders the day they're received.

BUCKEYE BETTERBUILT BUSHINGS

These Stock Bushings come machined, ready for instant use. All are broached, burnished and *ground* to extreme uniform accuracy. Standard or special oil grooves or drilled holes at a small extra charge. Rigid inspection prevails.

We also make to ***Blue Print***—bushings, bearings and cast bronze screw machine products in any quantity, any size, any analysis.

COMMERCIAL CORED, SOLID BRONZE BARS

Write for list of sizes carried in stock. Special sizes and castings upon request. Ask for Weight Chart.

Buckeye Brass & Mfg. Co., 6400 Hawthorne Ave., CLEVELAND, OHIO

USE the CHICAGO No. 2

POWER PIPE THREADING MACHINE

For

Production and Precision Threading

PORTABLE

Capacity:
¼" to 2" Pipe
½" to 1½" Bolt

Featuring:

1. Quick Die Change
2. Automatic Die Hand
3. Three Speeds
4. Perfected Oil Control

Send for Catalog

Chicago Pipethread Machine Co.

Office and Factory: 1623 Racine St., Racine, Wis.

Established 1858 **SAUNDERS** *Incorporated 1901*

Pipe Threading and Cutting Machinery

Belt or Electric Motor Driven

All sizes, ⅛ inch to 18 inches inclusive

Motor Driven Machines for Plumbers and Steam Fitters

Send for Catalogue

D. Saunders' Sons, Inc.

31 Atherton Street, Yonkers, N. Y.

Cable Address "Saunson Yonkers" *Telephone No. 364.*

Tolhurst Chip Wringers reclaim 6 to 15 gallons per load and handle three or four loads per hour.

Write

TOLHURST MACHINE WORKS
TROY, N.Y.

Style G Style G Style A Style C Style B Style D Style D

Opened Opened

TUCKER

Oil Hole Covers

Style E

ALSO—HERCULES
SHEAR AND ROD CUTTERS
AND
SCREW MACHINE PRODUCTS

Style F

A Type for Every Service

Send for Catalogue No. 12

W. W. & C. F. TUCKER, INC., 612 Capitol Ave., Hartford, Conn.

FOREIGN AGENTS: Fenwick Freres & Co., Paris, France
Alfred Herbert, Ltd., Yokohama, Japan

Analysis of Circulation of

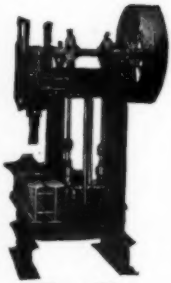
HITCHCOCK'S MACHINE TOOL BLUE BOOK

By Dun and Bradstreet Ratings

	Number Concerns
Exceeding $1,000,000	1,483
$500,000 to $1,000,000	916
$300,000 to $ 500,000	948
$200,000 to $ 300,000	842
$125,000 to $ 200,000	1,305
$ 75,000 to $ 125,000	1,455
$ 50,000 to $ 75,000	1,162
$ 20,000 to $ 50,000	2,847
$ 10,000 to $ 20,000	1,879
$ 5,000 to $ 10,000	1,672
TOTAL, Private Concerns Rated over $5,000	14,509
Steam and Street Railway Mechanical and Purchasing Officials, Government and Municipal Plants, Technical Schools, Foreign Dealers in American Machinery, Etc.	3,470
TOTAL to Buyers of Known Responsibility	17,979
*Concerns quoted in Dun or Bradstreet, but without Capital Rating	2,802
Concerns not yet in either Dun or Bradstreet, but in current Telephone Directories	1,799
Concerns rated below $5,000	2,677
TOTAL CIRCULATION	**25,257**

*This group includes a considerable number of large concerns, and many small concerns of high credit, whose capital rating is not given by either of the commercial agencies.

Lourie Hydraulic Presses



Type W

A High Speed Press
for
Straightening
Moulding
Punching
Forming

Lourie Hydraulic Co.
Springfield, Illinois

Atlas Arbor Presses

For All Forcing Operations

Illustration shows our No. 55 Power Drive Press, which is adaptable for fast production work and capable of supplying ten tons pressure.

Write for our Bulletin—showing 30 different sizes

Atlas Press Co.
Department B,
Kalamazoo, Michigan

Perfected Die Processing

Type BB

Malformed dies, waste of material and time, and excess operating expenses are obviated by the use of this

4-Post Screw Press

The precision with which it aligns punch and die, its power and simplicity in operation, and the mechanical perfection of its design, enable one man to do more and better work than two men can do any on other type of machine.

80 tons pressure
Table 20"x36"

Also three smaller sizes

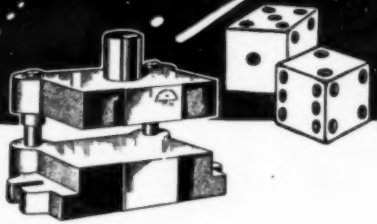
A Surface Grinder

that is a revelation in quiet, efficient work. Powerful, rigid, and sensitive in action. Equipped with all modern attachments.

JARECKI MACHINE AND TOOL CO.
Department A
GRAND RAPIDS, MICHIGAN

Your Dies

are too important to gamble with



You absolutely eliminate shearing of dies, increase the "pieces per grind" enormously and cut the "depth per grind" to ¼ or ⅛th when you use Danly Standard Leader Pin Die Sets.

You also save 20 to 50% in first cost . . . immediate delivery from nearest warehouse, as easily as writing out a requisition upon your own stock room. They are used and endorsed by almost 4000 makers of stampings.

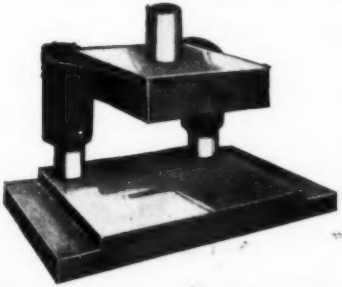
Danly Machine Specialties, Inc.

2116 So. 52nd Ave., Chicago, Ill.

Long Island City, N. Y.
35 Wilbur Ave.

Detroit, Mich.
1537 Temple Ave.

U. S. Tool Offers A New Steel Base Sub-Press



No More Costly than Iron-Base Sub-Presses

STEEL BASE—Larger in area than usual, giving greater strength when the blank hole is cut, greater resistance to strains and buckling. Thinner, lighter in weight, yet immensely stronger than cast-iron base presses.

ABSOLUTE INTERCHANGEABILITY—Any top fits any base, a positive assurance of precision.

HUSKY—Big pillars; extra long bushings hardened and ground.

EXTREMELY SIMPLE—Only three types meet every requirement for a sub-press.

POSITIVE LUBRICATION—A simple and ingenious arrangement provides positive lubrication for pillars.

COST—No more than ordinary cast base sub-presses.

SEND FOR CATALOG

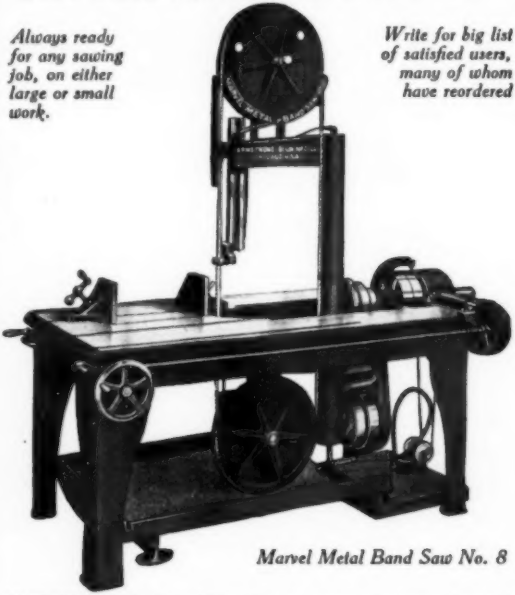
U. S. Tool Company, Inc.

AMPERE, N. J.

The Marvel Metal Band Saw

Always ready for any sawing job, on either large or small work.

Write for big list of satisfied users, many of whom have reordered



Marvel Metal Band Saw No. 8

UNIVERSAL in its adaptation to every variety of metal sawing. It saws bars, beams, channels, tubes, etc., rapidly and accurately, and does the finest tool room work. Saws at an angle either way without swinging the bar around the shop. Has big capacity up to 18". The large bed gives lots of room for material and tools. A saw for every need.

Write for Circular or the Complete Catalog of MARVEL Saws

ARMSTRONG-BLUM MFG. CO., 341 N.

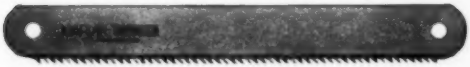
Eliminate Your Hack Saw Blade Troubles

By Using the New Patented

Marvel High-Speed-Edge Hack Saw Blade

For Use In All Power Machines

Genuine High Speed Steel Cutting Edge Positively Unbreakable



[Made in 12, 14, 17, 18, 21 and 24 inch lengths.]

[6, 8, 10, and 14 teeth to the in., in all lengths.]

Points of Superiority

Guaranteed.
Original, patented.
Cuts twice as fast.
Positively unbreakable.
A straighter, truer cut.
Most economical, most efficient.
Genuine high speed steel cutting edge.
At least six times the amount of cutting.
Modern methods of manufacturing assure uniformity.

They outlast common blades many times over, never break in the machine, and are cheaper in the end.

Once tried, you will want no other. Complete details and prices on request.

341 N. Francisco Ave., CHICAGO, ILL.

The Rapid CATLIN Keyseaters

Reduce Shop Costs Everywhere

Successful in
Automobile Plants
Government Shops
Navy Yards
and many big
Domestic and
Foreign Factories

Whether you need one keyseat or a thousand, the rapid "Catlin" will cut them to even better than 1000th of an inch accuracy. And its great speed explains its great economy. It cut a keyseat 6" long, 1" wide and 7/16" deep in a cast steel hub, in 3 minutes; this was in ordinary shop practice, with no attempt made to establish a record.

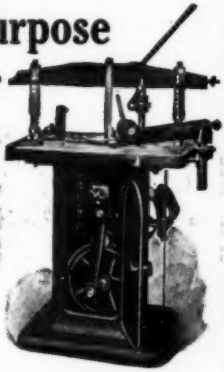
The picture shows the No. 1 Catlin, belt driven, with three-step cone pulley. Our other sizes, for belt or motor drive, cover practically all keyseating requirements.

Let us have your inquiry today. We shall be glad to answer questions and to mail you an interesting folder. Why postpone?

Chattanooga Machinery Company

2401 Bennett Ave., Chattanooga, Tenn.

Davis All-Purpose Keyseater



From the largest, to the smallest keyseating job, the DAVIS can be set up quickly for each item of a run of mixed work.

The Cutter

In sizes from 1/16 to 1-inch

And a Satisfactory Job

Cuts keyways in pulleys, gearblanks, bell cranks, crank handles, etc.; does slotting & oil grooving.

Two sizes. Write for folder, with table of cutting time.

Davis Keyseater Company

255½ Mill Street, Rochester, N. Y., U. S. A.

Keyseats Right On the Spot

No Dismantling—No Fuss

The BURR Portable Keyseater

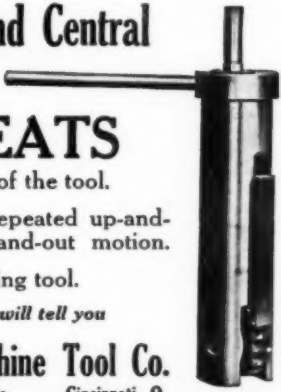
Cuts keyways up to 12" long, in shafts up to 5" diam., anywhere, in any position.

Have one on hand for your next emergency—the cost is often saved on a single job. The seven sizes are ***quick*** and ***accurate***. Hand or power driven. Over 10,000 in use. ***Order yours today and save money!***

JOHN T. BURR & SON

422 Kent Ave., Brooklyn, N. Y.

Straight and Central



KEYSEATS

with one cut of the tool.

There is no repeated up-and-down or in-and-out motion.

This is a milling tool.

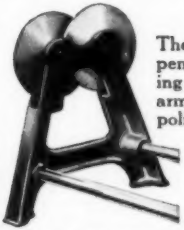
Catalog O will tell you

National Machine Tool Co.

2268 Spring Grove Ave., Cincinnati, O.

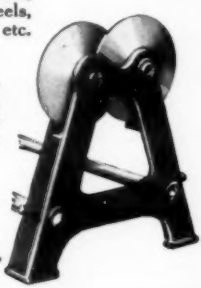
Twentieth Century Balancing Tool

Always on the level



The most practical, sensitive and inexpensive device manufactured for balancing pulleys, cones, armatures, fly wheels, polishing wheels, etc.

Will set anywhere and is easily portable. In sizes up to 24,000 pounds capacity.



Ask for the Bulletin

Sundstrand Machine Tool Co.
Rockford, Ill.

For Servicing Machines or Storage

"The Handiest Racks"

FOR SERVICING—They keep material beside lathe or screw machine, ready for instant use. Being neatly piled and sorted, operator loses no time in selecting stock. Saves time, steps, and space.

FOR STORAGE—Keeps pipe, shafting and bar stock neatly piled and assorted in smallest space, making it easy to handle and count. May be set against wall for a ***single-arm*** rack or out on floor as ***double-arm*** rack.

Re-Orders Prove Usefulness

One manufacturer recently ordered as follows: May 4, (3); May 17, (3); August 9, (4) and Sept. 12, (8). Another ordered his first three in August and 8 more in September. And so on.

Shipped on Trial if You Wish

Wm. S. Yohe Supply Co.
503 Mahoning Road, N. E., Canton, Ohio

T.H.L. Front Lever Bench Punch

Malleable iron body; working parts hardened. Steel shaft and plunger. Die cannot lose alignment with punch. All parts interchangeable. Built for hardest, toughest work.

PRICE $45

Extra Punches, 20 cents each; extra dies, 30 cents.

Capacity 13/32" thru 1/4" steel, 11/32" thru 5/16". Punches up to 1/2". Weight, 70 lbs.

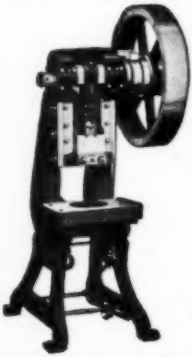
A good buy; can ship promptly

T. H. LEWTHWAITE MACHINE CO.

(Est. 1890)

311 E. 47th St., NEW YORK

The Spirit Of the Times



is reflected in the speed and stamina of Rockford High Duty Punch Presses.

They are built to produce and maintain Hi-Production—and they do it.

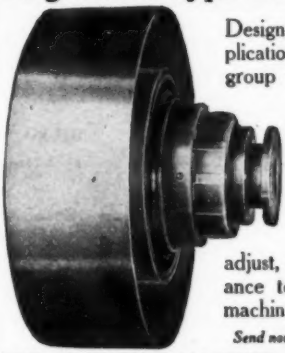
Wide range of sizes and types.

Write today for new catalog

Rockford Iron Works

Rockford, Ill.

Edgemont Type E Disc Clutch



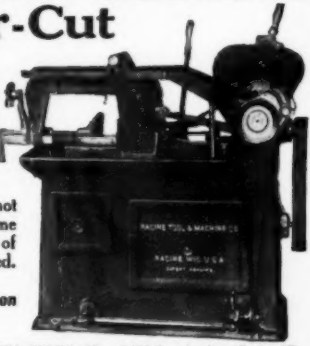
Designed for machine applications, high speeds and group drives, but is also adaptable for any other drives where an efficient, powerful clutch is needed. Extremely easy to operate and adjust, with neat appearance to match the best machine tools.

Send now for "Type E" bulletin

THE EDGEMONT MACHINE CO., Dayton, Ohio

The New RACINE Shear-Cut

Production Saw for High Speed Metal Cutting



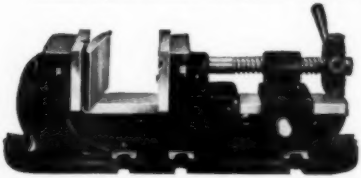
Time per cut does not vary. Cutting time reduced half. Life of saw blades tripled.

Send for bulletins on complete line.

RACINE TOOL & MACHINE CO., 1429 Junction Ave., Racine, Wis.

Gem Drill Press Vise

Holds tapered and irregular shaped pieces firmly



Made in three sizes up to 10½ in.

ITS STRENGTH, capacity, adaptability and quickness of setting make it ***the most efficient vise on the market.*** Swivel jaw adjusts automatically to odd shaped pieces. Adapted to an unusual variety of drilling and milling operations. A big time saver. Worth more than it costs.

Write for folder, illustrating some of its many uses.

J. E. Martin Tool & Die Works, 528 W. State St. Springfield, O.

SIGOURNEY
Sensitive Drills

All Parts Interchangeable!

Made with 1 to 4 spindles. Self-aligning ball bearings.

Extremely sensitive, accurate and durable, they are ***quality*** drills for those who buy tools for what they do.

The picture shows our No. 0 2-spindle ball bearing Bench Drill--a splendid tool.

Booklets on both Plain and Ball Bearing Drill

THE SIGOURNEY TOOL CO., HARTFORD, CONN.

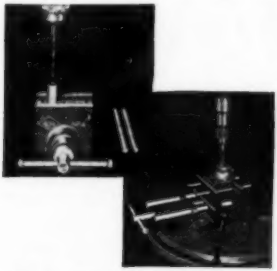
A Drill Table and Vise in One Tool

The Combination Drill Table and Vise makes set-ups quickly and accurately. Saves time and drills, and prevents accidents.

A Safety tool that saves its cost in labor every six months.

Write for free trial offer

MODERN MACHINE TOOL COMPANY
JACKSON, MICHIGAN



DEMCO

4 Point Drill Press Vise

This new Vise solves the problem of holding irregular shaped parts requiring a tapping or drilling operation.

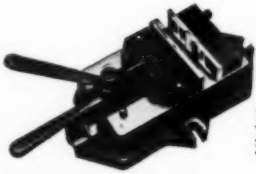
Built in large and small sizes
Price $15.00 and $25.00 respectively

Write for our new Bulletin

DEMCO Inc., 105-115 S. Calvert St., Baltimore, Md.

The Most POWERFUL Vise Made

Hartford Milling Vise



Jaw width .....5"
Jaw depth .....1¼"
Maximum opening...3½"
Weight.....40 lbs.

Also made in the swivel-jaw type with hard or soft jaws, maximum opening 2¼".

The "Hartford" is designed to give the utmost in service. A lower cam-faced handle gives required quick opening and return—while a top eccentric lever-handle furnishes tremendous binding power. You can rely on "Hartford" to survive the hardest usage. Its steel parts are drop forged, hardened and ground—its base is made of special iron.

Send for descriptive catalog illustrating its usefulness

Hartford Special Machinery Co., 285 Homestead Ave., Hartford, Conn.

BURKE

An Automatic Drill for Economical Production

The No. 1 Burke Automatic is the tool for production drilling within ⅜". It is automatic, and even when operated in gangs the machinist is allowed the freedom of both hands.

The accuracy of this sturdy tool is remarkable, and it retains its precision on the fastest production work. Counterbalanced tapered spindle running on large bearing on which is mounted top cone. Motor ¼ H. P., mounted on special base.

Send for catalog

The Burke Machine Tool Co., 297 E. 16th St., Conneaut, Ohio

The U. S.—

A Complete Motor-Driven 14" Sensitive Floor Drill

Price with motor, switch and belts -	$115
Or with Counter-shaft for Belt Drive	$70

Nothing Better for the quick and accurate drilling of holes ½" and smaller. Steel spindle, ground to size, with ball thrust bearing; vertical adjustment to head; tables for long and short work; three speeds, etc. Send us your order, or ask for more data.

The U. S. Machine Tool Co.
1952 W. 6th St., Cincinnati, Ohio

U. S. MULTIPLE SPINDLE Drill Heads

Made regularly with 2 to 6 adjustable spindles, to drill in *any pattern.* Special heads to order.

Also made with fixed spindles to fit your work.

Drills two or more holes with the same speeds and feeds that are used for drilling one.

Send us a layout of your work and we'll help to reduce your costs

The United States Drill Head Co., 1952 W. Sixth St., CINCINNATI, O.

Michigan Agents—National Sales Engineering Corp., Detroit, Mich.

Announcement

Wiard Quick Change Chucks

Collets and Repair Parts Formerly Manufactured by The American Standard Tool Works Can Now Be Purchased From

The J. C. Glenzer Company

6469 Epworth Boulevard,
DETROIT, MICH.

Who Have Acquired the Patents, Jigs, Gauges, Special Machinery, Etc.

Production of These Chucks Is Well Under Way and a Complete Stock Will Be Carried In Detroit.

MAY WE HAVE YOUR INQUIRIES?

ATTENTION—Try This Tool

For 10 days. You will want more of them

The

IMPROVED E-Z SET BORING TOOL

Made in 3 Sizes

Compact, Simple in Construction, Positive Adjustment, TOOL or PRODUCTION work—On Milling Machine, Boring Mill, Drill Press, Lathe or Screw Machine.

Ask for our descriptive circular, with net prices.

The Maxwell Products Co.

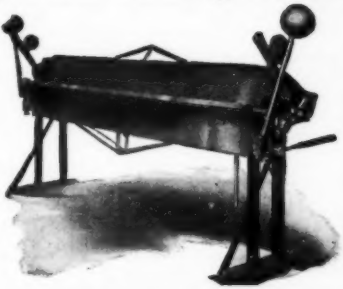
Ottawa & Indiana Ave., Cleveland, Ohio

Chicago Steel Bending Brakes

Hand and power, for bending from light sheets up to ¾ in. plate.

More than 25,000 in use.

Write for illustrated catalog



DREIS & KRUMP MFG. CO.
7422 Loomis Blvd., Chicago, Ill.

For Sure Balance--

an absolutely level and solid "Way" is necessary

Bowsher "Balancing Ways"

are brought to an absolute *level* in ten seconds. No revolving parts.

The edges or "knives" upon which the work is tested are ground *true*, and are mounted upon the planed "ways" of a heavy bed or frame.

Standards adjustable to suit length of arbor.

Three sizes for floor—one for bench use

Send for Catalog "F"

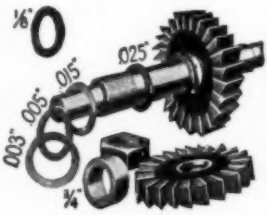
The N. P. Bowsher Co., South Bend, Ind.

MARKING DEVICES

THE SCHWERDTLE STAMP CO.
BRIDGEPORT, CONN.

Steel Spacing Washers—

Made of a good grade of Cold Rolled Strip Steel, also known as Shim Steel



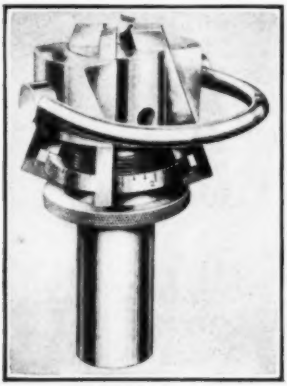
Stock sizes for arbors of following diameters: 3/8, 1/2, 5/8, 3/4, 7/8, 1, 1 1/8, 1 1/4, 1 3/8, 1 1/2, 1 5/8, 1 3/4, 1 7/8, 2, 2 1/4, 2 1/2, 3, 3 1/2 and 4 in. and larger.

Stock thicknesses: .002, .003, .004, .005, .006, .007, .008, .010, .012, .015, .020, .025, .032, .047, .063, .093 and .125 inch.

Other thicknesses up to 3.000" made to order, with keyways if so ordered.

Ask us to send samples; you'll like them

Detroit Stamping Company
3443 West Fort St., Detroit, Mich.



Save Tool Expense with

REISINGER Adjustable

Hollow Mills

No wrenches are required.

Micrometer adjustment of blades either way.

Interchangeable shanks.

Six sizes only are required for capacities from 1/16" to 2½".

Carefully made and thoroughly inspected as to accuracy and workmanship.

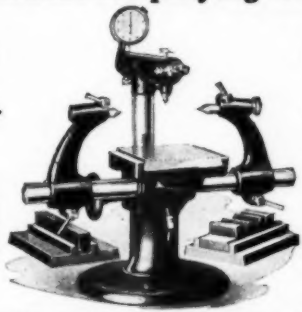
Send for new catalog
Territory Open

REISINGER MACHINE TOOL CORP.
837 LAKE AV., ROCHESTER, N. Y.

North Side Amplifying Gauges

Speedy

Accurate



Saves Spoiled Parts

Reads to $\frac{1}{10,000}$

The North Side Tool Co.
DAYTON, OHIO

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Lourie Hydraulic Co., Springfield, Ill.
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Scully-Jones & Co., 2012 W. 19th, Chicago

Chucks, Drill and Tap
Scully-Jones & Co., 2012 W. 19th, Chicago

Chucks, Keyway Cutting
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Pedrick Tool & Machine Co., Philadelphia

Cutters, Keyseating
Davis Keyseater Co., Rochester, N. Y.
Scully-Jones & Co., 2012 W. 19th, Chicago

Cutters, Milling
Genesee Mfg. Co., Rochester, N. Y.
Reisinger Mch. Tool Corp., Rochester, N. Y.

Cylinder Boring Machines, Portable
Pedrick Tool & Machine Co., Philadelphia

Demagnetizers
J. & H. Electric Co., Providence, R. I.

Classified Finding Index

Die Making Machines
Oliver Instrument Co., Adrian, Mich.

Dies, Automatic Self-Opening
Rickert-Shafer Co., Erie, Pa.

Die Sets
Danly Machine Specialties, Inc., 4913 Lincoln Ave., Chicago
U. S. Tool Co., Inc., Ampere, N. J.

Die Sinking and Engraving Machines
Gorton Machine Co., Geo., Racine, Wis.

Drafting Room Furniture and Supplies
Pease Co., C. F., 865 N. Franklin, Chicago

Drawing Instruments and Materials
Pease Co., C. F., 865 N. Franklin, Chicago

Drill Racks
Peerless Machine Co., Racine, Wis.

Drill Tables and Vise
Modern Machine Tool Co., Jackson, Mich.

Drilling Machine Heads, Multiple
United States Drill Head Co., Cincinnati

Drilling Machines, Bench
Avey Drilling Machine Co., Cincinnati
Barnes Co., W. F. & John, Rockford, Ill.
Burke Machine Tool Co., Conneaut, Ohio
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Edlund Machinery Co., Inc., Cortland, N. Y.
High Speed Hammer Co., Rochester, N. Y.
Merit Oil Equipment Co., Cleveland, O.
Sigourney Tool Co., Hartford, Conn.
Stecher Co., Chas., 2452 N. Greenview Ave., Chicago
Taylor & Fenn Co., Hartford, Conn.
Winterhoff Tool & Machine Co., Elkhart, Ind.

Drilling Machines, Horizontal
Barnes Co., W. F. & John, Rockford, Ill.
Edlund Machinery Co., Inc., Cortland, N. Y.

Drilling Machines, Multiple Spindle
Avey Drilling Machine Co., Cincinnati
Edlund Machinery Co., Inc., Cortland, N. Y.
Foote-Burt Co., Cleveland, O.
Kent Machine Co., Cuyahoga Falls, Ohio.
Merit Oil Equipment Co., Cleveland, O.
Sigourney Tool Co., Hartford, Conn.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Portable Electric
Hisey-Wolf Machine Co., Cincinnati, O.
Mail Tool Co., 8309 S. Chicago Ave., Chicago
Standard Electrical Tool Co., Cincinnati, O.
Stow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N. A., 5001 N. Lincoln St., Chicago
Winterhoff Tool & Machine Co., Elkhart, Ind.

Drilling Machines, Post
Canedy-Otto Mfg. Co., Chicago Heights, Ill.

Drilling Machines, Radial
American Tool Works Co., Cincinnati, O.
Canedy-Otto Mfg. Co. Chicago Heights, Ill.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Sensitive
Avey Drilling Machine Co., Cincinnati
Barnes Co., W. F. & John, Rockford, Ill.
Burke Machine Tool Co., Conneaut, Ohio
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Edlund Machinery Co., Inc., Cortland, N. Y.
Foote-Burt Co., Cleveland, O.
Leland-Gifford Co., Worcester, Mass.
Merit Oil Equipment Co., Cleveland, O.
Sigourney Tool Co., Hartford, Conn.
Stecher Co., Chas., 2452 N. Greenview Ave., Chicago
Taylor & Fenn Co., Hartford, Conn.
U. S. Machine Tool Co., Cincinnati, O.

Drilling Machines, Vertical
Avey Drilling Machine Co., Cincinnati
Barnes Co., W. F. & John, Rockford, Ill.
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Edlund Machinery Co., Inc., Cortland, N. Y.
Foote-Burt Co., Cleveland, O.
Leland-Gifford Co., Worcester, Mass.
Merit Oil Equipment Co., Cleveland, O.
Sigourney Tool Co., Hartford, Conn.
Standard Electrical Tool Co., Cincinnati, O.
Stecher Co., Chas., 2452 N. Greenview Ave., Chicago
Taylor & Fenn Co., Hartford, Conn.

Dust Handling Equipment
Knickerbocker Co., Jackson, Mich.

Emery Wheel Dressers and Cutters
Ross Manufacturing Co., Cleveland, O.
Taylor & Fenn Co., Hartford, Conn.
Western Tool & Mfg. Co., Springfield, O.

Engravers, Mechanical and Hand
Schwerdtle Stamp Co., Bridgeport, Conn.

Etching Machines, Electric
Brewster Co., Wm., Inc., 50 Church St., New York
Martindale Electric Co., Cleveland, O.

Feeders, Oil and Soda Water
New Britain Machine Co., New Britain, Conn.

Filing Cabinets, Steel and Wooden
Pease Co., C. F., 865 N. Franklin, Chicago

Filing Room Equipment
Wardwell Mfg. Co., Cleveland, O.
Rogers & Co., Samuel C., Buffalo, N. Y.

Forges
Canedy-Otto Mfg. Co., Chicago Heights, Ill.

Forgings, Hollow Bored
American Forge Co., 3631 S. Hoyne Ave., Chicago
American Hollow Boring Co., Erie, Pa.

Furniture, Machine Shop
New Britain Machine Co., New Britain, Conn.
Pollard Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago
Western Tool & Mfg. Co., Springfield, O.

Gauges, Taper
Hartford Special Mchy. Co., Hartford, Conn.

Gears
Boston Gear Works Sales Company, Norfolk Downs, Mass.
Chicago Stock Gear Works, 106 S. Jefferson, Chicago
Foote Bros. Gear & Machine Co., 213 Curtis St., Chicago
Massachusetts Gear & T. Co., Woburn, Mass.

Grinders, Knife
Rogers & Co., Samuel C., Buffalo, N. Y.

Grinding Machines, Belt
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Peerless Surfacing Machine Co., Troy, N. Y.
Walls Sales Corp., 96 Warren St., New York

Grinding Machines, Bench
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Hisey-Wolf Machine Co., Cincinnati, O.
Standard Electrical Tool Co., Cincinnati, O.

Classified Finding Index

Grinding Machines, Cutter, Reamer and Tool
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Jarecki Mchs. & T. Co., Grand Rapids, Mich.
Landis Tool Co., Waynesboro, Pa.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Cylindrical
Jarecki Mchs. & T. Co., Grand Rapids, Mich.
Landis Tool Co., Waynesboro, Pa.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Die
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Jarecki Mchs. & T. Co., Grand Rapids, Mich.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Disc
Charlestown Machine Co., Fitchburg, Mass.
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Porter Cable Machine Co., Syracuse, N. Y.

Grinding Machines, Drill
Gallmeyer & Livingston Co., Grand Rapids, Mich.
La Salle Tool Co., Ottawa, Ill.
Oliver Instrument Co., Adrian, Mich.

Grinding Machines, Electric
North Side Tool Co., Dayton, Ohio

Grinding Machines, Face
Taylor & Fenn Co., Hartford, Conn.

Grinding Machines, Flexible Shaft
Keller Mch. Eng. Corp., 68A Washington St., Brooklyn, N. Y.

Grinding Machines, Internal
Landis Tool Co., Waynesboro, Pa.
Mall Tool Co., 8369 S. Chicago Ave., Chgo.
Taylor & Fenn Co., Hartford, Conn.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Portable Electric
Hisey-Wolf Machine Co., Cincinnati, O.
Mall Tool Co., 8369 S. Chicago Ave., Chgo.
Porter-Cable Machine Co., Syracuse, N. Y.
Standard Electrical Tool Co., Cincinnati, O.
Stow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N.A., 6001 N. Lincoln St., Chigo

Grinding Machines, Snagging
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Jarecki Mchs. & T. Co., Grand Rapids, Mich.

Grinding Machines, Surface
Gallmeyer & Livingston Co., Grand Rapids, Mich.
La Salle Tool Co., Ottawa, Ill.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Tap
Gallmeyer & Livingston Co., Grand Rapids, Mich.

Grinding Machines, Tool
Kent Machine Co., Cuyahoga Falls, Ohio.
Standard Electrical Tool Co., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.

Grinding Machines, Universal
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Landis Tool Co., Waynesboro, Pa.
Thompson Grinder Co., Springfield, Ohio

Hack Saw Blades
Peerless Machine Co., Racine, Wis.

Hack Saw Machines
Armstrong-Blum Mfg. Co., 841 N. Francisco Av., Chicago
Peerless Machine Co., Racine, Wis.
Racine Tool & Machine Co., Racine, Wis.

Hammers, Riveting
High Speed Hammer Co., Rochester, N. Y.

Handles, File
Hyro Mfg. Co., 352 W. 13th, New York.

Handles, Soldering Iron
Hyro Mfg. Co., 352 W. 13th, New York.

Hoists, Portable
Canton Foundry & Machine Co., Canton, Ohio

Hydraulic Machinery
Lourie Hydraulic Co., Springfield, Ill.

Instruments, Engineering and Surveyors
Pease Co., C. F., 865 N. Franklin, Chicago

Jigs and Fixtures
Hartford Special Mchy. Co., Hartford, Conn.

Keyseating Machines
Burr & Son, John T., Brooklyn, N. Y.
Chattanooga Mchy. Co., Chattanooga, Tenn.
Davis Keyseater Co., Rochester, N. Y.
National Machine Tool Co., Cincinnati

Lathe Accessories and Attachments
Cisco Machine Tool Co., Cincinnati, O.
Maxwell Products Co., Cleveland, O.

Lathe Turrets
Maxwell Products Co., Cleveland, O.

Lathes, Bench
Hardinge Brothers, Inc., 1770 Berteau Ave., Chicago
Monarch Machine Tool Co., Sidney, O.
Oliver Mfg. Co., W. W., Buffalo, N. Y.

Lathes, Engine
American Tool Works Co., Cincinnati, O.
Barnes Co., W. F. & John, Rockford, Ill.
Bore & Emmes Mch. Tool Co., Cincinnati, O.
Bradford Machine Tool Co., Cincinnati, O.
Carroll Mchs. Tool Co., A. V., Cincinnati, O.
Carroll & Jamieson Mch. Tool Co., Batavia, O.
Cisco Machine Tool Co., Cincinnati, O.
Hamilton Tool Co., Hamilton, O.
Hardinge Brothers, Inc., 1770 Berteau Ave., Chicago
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Monarch Machine Tool Co., Sidney, O.
Porter-Cable Machine Co., Syracuse, N. Y.
Springfield Machine Tool Co., Springfield, O.

Lathes, Extension Bed Gap
Hahn-Larmon Co., Cincinnati, O.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.

Lathes, Foot Power
Barnes Co., W. F. & John, Rockford, Ill.

Lathes, Gap
Carroll Mchs. Tool Co., A. V., Cincinnati, O.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.

Lathes, Manufacturing
Sundstrand Machine Tool Co., Rockford, Ill.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.

Lathes, Precision
LeBlond Mch. Tool Co., R.K., Cincinnati, O.

Lathes, Short Bed
Artisan Mfg. Co., Cincinnati, O.
Monarch Machine Tool Co., Sidney, O.
Porter-Cable Machine Co., Syracuse, N. Y.

Lathes, Turret
Bradford Machine Tool Co., Cincinnati, O.
Monarch Machine Tool Co., Sidney, O.

Classified Finding Index

Mandrels, Expanding
Nicholson & Co., W. H., Wilkes-Barre, Pa.
Western Tool & Mfg. Co., Springfield, O.

Mandrels, Hollow
Hyro Mfg. Co., 352 W. 13th, New York.

Mandrels, Solid
Nicholson & Co., W. H., Wilkes-Barre, Pa.

Milling Attachments
Burke Machine Tool Co., Conneaut, Ohio
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Porter Cable Machine Co., Syracuse, N. Y.
Taylor & Fenn Co., Hartford, Conn.

Milling Machine Spacing Washers
Maxwell Products Co., Cleveland, O.

Milling Machines, Bench
Burke Machine Tool Co., Conneaut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Hand
Burke Machine Tool Co., Conneaut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.
U. S. Machine Tool Co., Cincinnati, O.

Milling Machines, Manufacturing
Kearney & Trecker Corp., Milwaukee, Wis.

Milling Machines, Plain
Burke Machine Tool Co., Conneaut, Ohio
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Portable
Pedrick Tool & Machine Co., Philadelphia

Milling Machines, Spline
Taylor & Fenn Co., Hartford, Conn.

Milling Machines, Universal
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.

Milling Machines, Vertical
Burke Machine Tool Co., Conneaut, Ohio
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.

Mills, Adjustable Hollow
Genesee Mfg. Co., Rochester, N. Y.
Reisinger Mch. Tool Corp., Rochester, N.Y.

Motors, Electric
Fairbanks, Morse & Co., Chicago
Reliance Electric & Eng. Co., Cleveland

Name Plates, Etched and Stamped
Schwerdtle Stamp Co., Bridgeport, Conn.

Nut Setters, Flexible Shaft
Blax Flexible Shaft Co., 136 Liberty Street, New York

Oil Cups
Gits Bros. Mfg. Co., 1940 S. Kilbourn Ave., Chicago
Tucker, W. W. & C.F., Inc., Hartford, Conn.

Oil Extractors
Telhurst Machine Works, Troy, N. Y.

Oil Hole Covers
Tucker, W. W. & C.F., Inc., Hartford, Conn.

Pattern Shop Machinery
Towsley Mfg. Co., John T., Cincinnati

Pins, Leader And Dowel
Danly Machine Specialties, Inc., 4919 Lincoln Ave., Chicago

Pipe Bending Machines
Pedrick Tool & Machine Co., Philadelphia

Pipe Cutters, Hand
Saunders' Sons, D., Inc., Yonkers, N. Y.

Pipe Cutting and Threading Machines
Chicago Pipethread Co., Racine, Wis.
Saunders' Sons, D., Inc., Yonkers, N. Y.

Pipe Threading Diehead
Saunders' Sons, D., Inc., Yonkers, N. Y.

Pipe Vises
Saunders' Sons, D., Inc., Yonkers, N. Y.

Planers, Valve Seat, Portable
Pedrick Tool & Machine Co., Philadelphia

Paint Thinning Machines
Oliver Instrument Co., Adrian, Mich.

Pointers, Semi-Automatic
Kent Machine Co., Cuyahoga Falls, Ohio.

Polishing and Buffing Machines
Cisco Machine Tool Co., Cincinnati, O.
Hisey-Wolf Machine Co., Cincinnati, O.
Mail Tool Co., 3330 S. Chicago Ave., Chicago
New Britain Machine Co., New Britain, Conn.
North Side Tool Co., Dayton, Ohio
Standard Electrical Tool Co., Cincinnati, O.

Presses, Arbor
Atlas Press Co., Kalamazoo, Mich.
Barnes Co., W. F. & John, Rockford, Ill.
Lourie Hydraulic Co., Springfield, Ill.
Nicholson & Co., W. H., Wilkes-Barre, Pa.

Presses, Broaching
Lourie Hydraulic Co., Springfield, Ill.

Presses, Drawing
Lourie Hydraulic Co., Springfield, Ill.

Presses, Flanging
Lourie Hydraulic Co., Springfield, Ill.

Presses, Foot
Rockford Iron Works, Rockford, Ill.
Taylor & Fenn Co., Hartford, Conn.

Presses, Forcing
Lourie Hydraulic Co., Springfield, Ill.
Lucas Machine Tool Co., Cleveland, O.

Presses, Forming
Dreis & Krump Mfg. Co., 7422 Loomis Blvd., Chicago
Lourie Hydraulic Co., Springfield, Ill.

Presses, Power
Hendley & Whittemore Co., Beloit, Wis.
Lourie Hydraulic Co., Springfield, Ill
Lucas Machine Tool Co., Cleveland, O.
Rockford Iron Works, Rockford, Ill.

Presses, Punch
Lewthwaite Mche. Co., T.H., 417E. 21st., N.Y.
Rockford Iron Works, Rockford, Ill.

Presses, Screw
Barnes Co., W. F. & John, Rockford, Ill.
Jarecki Mche. & T. Co., Grand Rapids, Mich.
Towsley Mfg. Co., John T., Cincinnati

Presses, Wheel
Lourie Hydraulic Co., Springfield, Ill.

Profiling Machines
Oliver Instrument Co., Adrian, Mich.

Pulley Machinery
Avey Drilling Machine Co., Cincinnati

Classified Finding Index

Pumps, Coolant
Fulflo Specialties Co., Blanchester, O.

Pumps, Hydraulic
Lourie Hydraulic Co., Springfield, Ill.

Pumps, Lubricant
Rathman Machinery Co., Cincinnati, O.

Punch Press Feeds
Rockford Iron Works, Rockford, Ill.

Punch, Shear and Bender, Hand
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago

Punches, Hand
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Hyro Mfg. Co., 352 W. 13th, New York
Lewthwaite Mche. Co., T. H., 417 E. 31st St., New York
Whitney Metal Tool Co., Rockford, Ill.

Punches, Power
Hendley & Whittemore Co., Beloit, Wis.

Punches and Dies
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Mche. Co., T. H., 417 E. 31st., N. Y.
Rockford Iron Works, Rockford, Ill.

Racks, Bar Stock
New Britain Machine Co., New Britain, Conn.
Pollard Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago
Yohe Supply Co., Wm. S., Canton, O.

Reamers, Adjustable
Schellenbach-Hunt Tool Co., Cincinnati, O.

Reamers, Expanding
Lambert Mche. & Engine'g Co., Cleveland, O.

Reamer Holders
Nicholson & Co., W. H., Wilkesbarre, Pa.

Reels, Extension
Cincinnati Specialty Mfg. Co., Cincinnati, O.

Riveting Machines
Grant Mfg. & Mche. Co., Bridgeport, Conn.
High Speed Hammer Co., Rochester, N. Y.

Rod Cutters
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Mche. Co., T. H., 417 E. 31st., N. Y.
Tucker, W. W. & C. F., Inc., Hartford, Conn.

Saw Sharpening Machines
Wardwell Mfg. Co., Cleveland, O.
Rogers & Co., Samuel C., Buffalo, N. Y.

Scraping Machines, Hand & Pneumatic
Anderson Brothers Mfg. Co., Rockford, Ill.

Screw Drivers, Electric
Hisey-Wolf Machine Co., Cincinnati, O.

Screw Driving Machines, Automatic
Reynolds Machine Co., Massillon, Ohio

Screw Machine Products
Buckeye Brass & Mfg. Co., Cleveland, O.

Screw Machines, Automatic
New Britain Mche. Co., New Britain, Conn.

Screw Slotters
Kent Machine Co., Cuyahoga Falls, Ohio.

Shafts, Flexible
Keller Mech. Eng. Corp., 58A Washington St., Brooklyn, N. Y.
Mall Tool Co., 8389 S. Chicago Ave., Chgo.
Stow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N. A., 5001 N. Lincoln St., Chgo.

Shafts, Steel
American Hollow Boring Co., Erie, Pa.

Shaping Machines
American Tool Works Co., Cincinnati, O.
Osborne & Sexton Machy. Co., Columbus, O.
Rhodes Mfg. Co., Hartford, Conn.
Smith & Mills Co., Cincinnati
Springfield Machine Tool Co., Springfield, O.

Shears, Alligator
Canton Foundry & Machine Co., Canton, O.

Shears, Hand
Armstrong-Blum Mfg. Co. 341 N. Francisco Av., Chicago
Dreis & Krump Mfg. Co., 7622 Loomis Blvd., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Machine Co., T. H., 417 E. 31st St., New York
Oliver Mfg. Co., W. W., Buffalo, N. Y.
Tucker, W. W. & C. F., Inc., Hartford, Conn.
Whitney Metal Tool Co., Rockford, Ill.

Shears, Power
Hendley & Whittemore Co., Beloit, Wis.

Slotting Machines
Rhodes Mfg. Co., Hartford, Conn.

Spacing Washers
Detroit Stamping Co., Detroit, Mich.

Special Tools and Machinery
Bradford Machine Tool Co., Cincinnati, O.
Foote Bros. Gear & Machine Co., 213 Curtis St., Chicago
Schellenbach, W. L., Cincinnati, O.
Stecher Co., Chas., 2452 N. Greenview Ave., Chicago
U. S. Tool Co., Inc., Ampere, N. J.

Speed Reducers
Foote Bros. Gear & Machine Co., 213 Curtis St., Chicago

Sprockets
Foote Bros. Gear & Machine Co., 213 Curtis St., Chicago
Massachusetts Gear & T. Co., Woburn, Mass.

Stamps, Steel and Rubber
Schwerdtle Stamp Co., Bridgeport, Conn.

Stencils, Brass and Oil Board
Schwerdtle Stamp Co., Bridgeport, Conn.

Stools and Chairs, Factory
Chicago Wire Chair Co., 619 N. La Salle St., Chicago
Pollard Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago

Straightening Machines
Springfield Machine Tool Co., Springfield, O.
Townsley Mfg. Co., John T., Cincinnati
Whitney Metal Tool Co., Rockford, Ill.

Tables and Stools, Draftsman's
Pease Co., C. F., 965 N. Franklin, Chicago

Tap Extractors
Walton Co., Hartford, Conn.

Tapping Machines and Attachments
Alto Mfg. Co., 1647 Wolfram St., Chicago
Avey Drilling Machine Co., Cincinnati
Burke Machine Tool Co., Conneaut, Ohio
Eastern Tube & Tool Co., Inc., 580 Johnson Ave., Brooklyn, N. Y.
Leland-Gifford Co., Worcester, Mass.
Rickert-Shafer Co., Erie, Pa.
Whitney Metal Tool Co., Rockford, Ill.

Classified Finding Index

Thread Dials
Colvan, J. M., Yonkers, N. Y.

Thread Milling Attachments
Cisco Machine Tool Co., Cincinnati, O.

Threading Machines
Kent Machine Co., Cuyahoga Falls, Ohio.
Rickert-Shafer Co., Erie, Pa.

Threading Tools
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago

Tool Holders
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago
Western Tool & Mfg. Co., Springfield, O.

Tool Racks
Chicago Wire Chair Co., 439 N. La Salle St., Chicago

Tool Stands
Pollard Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago

Tools, Boring
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago

Tools, Lathe and Planer
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago

Tools, Machinists'
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago

Tools, Spot Facing
Genesee Mfg. Co., Rochester, N. Y.
Reisinger Mch. Tool Corp., Rochester, N. Y.

Trucks, Machine Shop
New Britain Machine Co., New Britain, Conn.
Pollard Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago
Towsley Mfg. Co., John T., Cincinnati

Turntables
Canton Foundry & Machine Co., Canton, O.

Universal Joints
American Tool Works, Inc., Hartford, Conn.
Borgeson Mfg. Co., Inc., Torrington, Conn.
Boston Gear Works Sales Company, Norfolk Downs, Mass.

Used and Rebuilt Machinery
Associated Machine Tool Co., 189 7th St., Brooklyn, N. Y.
Bath & Co., Cyril J., Cleveland, O.
Beal & Co., Joseph, Boston, Mass.
Bennett Mchy. Co., 50 Church St., New York
Bernstein & Co., Geo. M., 549 W. Washington Blvd., Chicago
Bertolette Machine Tool Co., Inc., Jersey City, N. J.
Brown Machinery Co., St. Louis, Mo.
Brownell Machinery Co., Providence, R. I.
Carlson Machinery Co., Davenport, Iowa
Cincinnati Mchy. & Supply Co., Cincinnati, O.
Clark Machinery Co., Cleveland, O.
Clinton Mchry. Co., 128 S. Clinton, Chicago
Colcord-Wright Mchy. Co., St. Louis.
Co-Operative Machinery Co., Cleveland, O.
Delta Equipment Co., Philadelphia, Pa.
Donahue Steel Products Co., 74th and Ashland Ave., Chicago
Eastern Machinery Co., Cincinnati, O.
Easley Machinery Co., E. L., 555 Washington Blvd., Chicago
Fitzsimmons-Cole Mchy. Co., Pittsburgh, Pa.
Foster Machinery Co., Cleveland, O.
Hnatten & Co., J. E., Inc., 50 Church St., New York
Harris Bros. Co., 35th & Iron, Chicago
Hill, Clarke & Co., 649 W. Washington Blvd., Chicago
Hyman & Sons, Joseph, Philadelphia
Irwin Mfg. Co., H. R., Cincinnati, Ohio.
Johnson & Sons Machinery Co., Wm. C., St. Louis, Mo.
Jones Machine Tool Co., Cincinnati, O.

Used and Rebuilt Machinery—Continued
Kinney Co., E. A., Cincinnati, O.
Klauber Mchy. Co., E. L., St. Louis.
Little Co., W. F., Cleveland, O.
Lucas & Son, F. B., Inc., Bridgeport, Conn.
McDonald Machinery Co., St. Louis
McMullen Mchy. Co., Grand Rapids, Mich.
Manhattan Machinery Exchange, 30 Church St., New York
Marr-Galbreath Mchy. Co., Pittsburgh, Pa.
Marsh Machinery Co., A. R., Cleveland, O.
Midland Equipment Co., 612 W. Van Buren, Chicago
Mid-West Machine Tool & Supply Company, Davenport, Iowa
Miles Machinery Co., Saginaw, W. S., Mich.
Molitor Machy. Co., Char., 118 S. Clinton St., Chicago
Monarch Mchy. Co., Philadelphia, Pa.
Morey and Co., Inc., 408 Broome St., N. Y.
Morris Machinery Co., Inc., Newark, N. J.
Motch & Merryweather Machinery Co., Cleveland, O.
Nelson Machinery Co., Green Bay, Wis.
New Jersey Mchy. Exch., Newark, N. J.
Niles Tool Works Co., Hamilton, O.
Norton-Broadway Mchy. Co., Cincinnati, O.
O'Brien Machinery Co., Philadelphia
Osborne & Sexton Machy. Co., Columbus, O.
Pattison Supply Co., W. M., Cleveland, O.
Peninsular Machinery Co., Detroit, Mich.
Prentiss & Co., Henry, 149 Broadway, N. Y.
Randle Machinery Co., Cincinnati, O.
Reeve-Fritts Co., 37 S. Desplaines, Chicago
Reliance Mchy. Sales Co., Pittsburgh, Pa.
Rentschler & Co., J. P., 6722 N. Maplewood Ave., Chicago
Riverside Machinery Depot, Detroit, Mich.
Russell Machine Co., Pittsburgh, Pa.
Saltzman, B. L., 809 W. Lake St., Chicago
Scott - Sandbach Machinery Co., 120 So. Clinton, Chicago
Selfroat-Elstad Machinery Co., Dayton, O
Severin-Strafar Machinery Corp., 50 Church St., New York
Simmons Machine Tool Corp., Albany, N. Y.
Stocker-Rumely-Wache Co., 117 N. Jefferson St., Chicago
Stoehr Machinery Co., A. M., 418 Mid-City Bank Bldg., Chicago
Strong, Carlisle & Hammond Co., Cleveland
Sun Machinery Co., Newark, N. J.
Surplus Machinery Co., Kalamazoo, Mich.
Syracuse Supply Co., Syracuse, N. Y.
Taylor-Hall Welding Corp., Worcester, Mass.
Tuhor, Velick & Co., Inc., Lake & Desplaines Sts., Chicago
United Mchy. & Supply Co., St. Louis.
Wayne Machinery Co., Ft Wayne, Ind.
White Machy. Co., A. D., 108 N. Jefferson St., Chicago
Wickes Machinery Co., Jersey City, N. J.
Winterer, Herman L., Philadelphia

Vises, Drilling Machine
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago
Demco, Incorporated, Baltimore, Maryland.
Martin Tool & Die Works, J. E., Springfield, O.

Vises, Machinists'
New Britain Machine Co., New Britain, Conn.
Western Tool & Mfg. Co., Springfield, O.

Vises, Milling Machine
Hartford Special Mchy. Co., Hartford, Conn.

Welders, Electric Spot
Taylor-Winfield Corp., Warren, O.

Wood Working Machinery
Hendley & Whittemore Co., Beloit, Wis.
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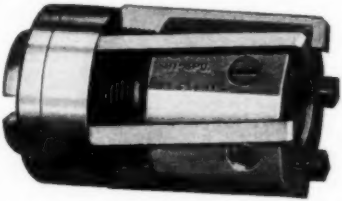

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MILLING MACHINES.

No. 4-A B. & S. univ. s. p. d.
No. 1½ B. & S. universal.
No. 20 Oesterlein universal.
No. 4-B heavy B. & S. plain s. p. d.
No. 3 G. H. LeBlond hvy. pl., s.p.d.
No. 2 B. & S. vertical.
Whitney hand.

PLANERS AND SHAPERS

36"x36"x10' Woodward & Powell, heavy duty, 3 heads, m. d.
24"x24"x6' Whitcomb.
17"x17"x4' Whitcomb.
20" Smith & Mills shaper.

POWER PRESSES.

No. 1 Sidney o. b. inclinable.
No. 2-A Standard s. a.
No. 4 Manville Bros. s. a. p. p., ratchet dial feed.
No. 4 E. J. Manville s. a. p. p.
No. 2-B Standard double action inclinable.
No. 1 Bliss d. a. cam.

SCREW MACHINES.

No. 0 B. & S. pl. hd., wire feed ⅜".
No. 2 Bardons & O., wire fd., g. f. h.
1½x18 Pratt & Whitney b. g.
3"x36" J. & L. flat turret.

MISCELLANEOUS.

Band saw, metal, 12" H. & R.
Cornice brake 4' double truss.
Engine turning machine, Field.
Filing machine, Thurston.
Slotter, 12" Bement-Miles.

USED AND REBUILT MACHINERY

FOR SALE BY

Colcord-Wright Machinery & Supply Co.

1223-29 North Broadway, - - - St. Louis, Mo.

Automatic, No. 00 B. & S.
Automatic, No. 0 B. & S.
Automatic drop press, No. 2 Standard
Boring mill, 30" Gisholt, m. d.
Fox Lathe, No. 2 W. & S. universal.
Grinder, No. 1 B. & S. universal.
Grinder, No. 2 Diamond water tool.
Grinder, No. 4 Modern universal.
Miller, Whitney hand (3).
Miller, No. 2 Hendey Lincoln (5).
Miller, Gooley & Edlund.
Paint grinding mill, Day.
Pipe machine, 12" Curtis.
Planer, 24x24x6' Ohio.
Planer, 48x36x12' Cleveland openside.
Polishing & finishing mche., B. & S.
Press, P4 Ferracute.
Punch, style M6 Rock River.
Scrap baler, Champion (2).
Screw machine, No. 2 W. & S., w. f.
Saw grinder, 12" Automatic.
Saw, No. 1 Cochrane-Bly.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

1211-1223 N. 12th St., St. Louis, Mo.

LATHES.

15"x 6' Monarch, q. c. g.
15"x10' Cisco.
16"x 8' Cleveland tool room.
18"x 8' LeBlond, q. c. g.
20"x20' LeBlond.
38"x14' Pond, triple geared.
60" New Haven turning. 7' centers.
18' Wickes pit lathe, extra heavy, and almost new.

MILLING MACHINES.

No. 3 Rockford, hand.
No. 1½ Brown & Sharpe.
No. 3 Cincinnati plain.
No. 5 Brown & Sharpe.
No. 4 Cincinnati plain.
Owen duplex.
No. 25 Becker.
No. 12 Kempsmith.
37"x30"x8' Slab miller.

DRILLING MACHINES.

20" Champion.
22" Barnes, sliding head.
3-spindle Allen, h. s.
32" Mechanics.
42" New Haven.
All sizes Barnes.

PLANERS AND SHAPERS.

24"x24"x 6' Powell planer.
30"x30"x8' Belmer planer.
36"x36"x18' Hamilton planer.
42"x42"x12' Powell planer.
48"x48"x16' Niles, 2 heads.
16" Smith & Mills shaper.
20" Gould & E., b. g. crank shaper.

GRINDERS.

No. 6—28" Besly disc.
No. 50 Gardner disc, 30" capacity.
8" Heald rotary, magnetic chuck.
10"x72" Brown & Sharpe plain.
No. 1 Diamond surface.
No. 1 Fraser surface.
5"x18" Ott.
10"x18" Sterling universal.

SCREW AND TURRET MACHINES.

2"x24" J. & L., geared head.
3"x36" J. & L., geared head.
No. 1 Pratt & Whitney.
No. 6 Warner & Swasey.

PRECISION TOOLS.

No. 1 Dayton swaging machine.
No. 3½—7" swing Stark bench lathes.

MISCELLANEOUS.

Air compressors.
Belt lacer, 12" Peerless.
Boring mche., hor., No. 2 P. & H.
Boring mche., hor., No. 3 Niles.
Boring mill, 54" Baush, 2 heads.
Boring mill, 84" Niles, 2 hds., h. d.
Furnaces, Stewart cyanide hardening
Gear cutter, No. 1 Schuchardt & S.
Gear hobber, No. 1 Farwell.
Hammer, Bradley 60 lb., belt power.
Hammer, 2000 lb. Niles-B. steam.
Pipe machine, 6" Oster.
Pipe mche., 8" Bignall & Keeler.
Press, No. 16 Stoll inclinable.
Punch, Queen City 36".
Punch, 42" thrt., Cleveland, s. e.
Punch, 48" thrt. Hilles & Jones.
Punch, 36" throat, single end.
Shear, Lennox, rotary bevel.
Shear, 8' Morgan gate shear.
Shear, bar, No. 620-R Niles, Bement & Pond, 6 hole, 2" cap.
Slotter, 13" Niles.
Welder, butt, 200 amp.
Welder, spot, Toledo 36" reach, 20k.w.

FOR SALE BY

Brown Machinery Co., • • 2323 N. 9th St., St. Louis, Mo.

Beaders, No. 8 Pettingell, 42" thrt.
Blowers, Nos. 7 & 9 Sturtevant.
Buffer, Hisey, 3 h.p., 3-p., 60 c., 220 v.
Cut-off mchs., Nutter & Barnes.
Drill, 20" Canedy-Otto, b. g., p. f.
Drill, 22" Barnes, slid. hd., b. g., p. f.
Drill, 24" Aurora b. g., p. f., t. a.
Drill, 25" Superior, sliding head.
Drill, No. 2 Barnes horiz. radial.
Drill, horiz. radial, No. 3 Barnes.
Furnaces, Nos. 1 and 2 American.
Grinders, emery, St. Louis & Western, 100 new at 50% discount.
Grinders, drill, W. & M. American.
Grinder, pl. and surf., No. 1 LaSalle.
Grinders, tool, Diamond.
Grinders, tool post, U. S. & Hisey.
Grinders, plain, No. 12 B. & S.; 10x36" Norton; 5x18" Ott.
Grinder, cylinder, No. 60 Heald.
Grinders, disk, No. 6 Besly; No. 14 Gardner.
Grinder, universal, No. 12 B. & S.
Grinder, 30" Diamond, roll or spdl.
Hammer, size A United, 50 lbs., m.d.
Hammer, helve, 40 lb. Bradley.
Keyseater, No. 2 Davis.
Lathe, 26"x10' Whitcomb-B., q. c. g.
Lathe, 20"x 8' Lodge & S., q. c. g.
Lathe, 17"x 6' Cincinnati.
Lathes, 16"x5' Monarch, q. c. g.
Lathes, 16"x6' Monarch, q. c. g.
Lathes, No. 5A Potter & Johnston, with chucks.
Lathe, turret, 16" Gisholt.
Motors, 1, 3, 5, 7½, 10, 15, 25 h. p., 3-ph., 60 cy., 220 v.
Miller, No. 6 Whitney hand.
Miller, No. 4 Garvin plain.
Planers, 60"x60"x20' Niles, 2 heads.
Polishers, drop head, New Britain.
Press, No. 5 Stiles & Parker, grd.
Presses, L. & J., o. b. i.
Riveter, 2" Adt.
Screw machine, 1" Pratt & Whitney.
Shapers, 24" L. & D.; 24" S. & S.
Shear, rotary, No. 13 Pettingell.
Shear, rotary splitting, No. 134 Marshalltown, 4' throat, 8" cap.
Tapping machines, Garvin; Burke C.

Full Line of P. S. & W. Sheet Metalworking Machinery.

FOR SALE BY

Sun Machinery Co., Inc., 39 Hamilton St., Newark, N. J.

BORING MILLS.

36" Bullard v. t. l., with cutting lubricant system.
42" Bullard, s. p. d.
54" Bullard rapid production.
53" Niles-Bement-Pond.
100" Niles, m. d.
110" Betts, b. d.
192" Niles, m. d.
16'—36' Niles, m. d.
8" Bullard mult-au-matics.
7'—10' Betts, m. d.

RADIAL AND UPRIGHT DRILLS.

8' Pond, s. p. d.
6' Baush, s. p. d.
6' Cincinnati-Bickford universal.
3½' Mueller, s. p. d.
No. 30 Natco, 48 spindles.
42" Cincinnati-Bickford, m. d.

MILLING MACHINES.

No. 4 LeBlond h. d., cone.
No. 2 Brown & Sharpe universal.
No. 3 Cincinnati high-power, s. p. d.
60"x48"x18' Ingersoll, 4 heads, adjustable.
30"x30"x12' Ingersoll.

LATHES.

60"x40' Fifield, triple geared.
48"x42' Johnson t. g., cone.
36"x42' Johnson t. g., cone.
30"x20' Fitchburg.
30"x18' H. S. G., q. c. g.
19"x 8' LeBlond, q. c. g.
18"x 8' Walcott, q. c. g.
18"x 8' Monarch, q. c. g.

PLANERS AND SHAPERS.

10'x 7'x25' D. & H. openside.
10'x10'x36' Betts.
72"x72"x30' Sellers.
60"x60"x20' Cincinnati.
48"x48"x16' Pond.
36"x36"x17' Gray.
24"x24"x 6' Gray.
18" Smith & Mills shaper.

MISCELLANEOUS.

Bending rolls, pyramid, 10'.
No. 0 Baker, No. 2 M. & M. Keys.
Keel bender, American.
Punch, 72" H. & J., brand new.
Punch, 48" Cleveland, brand new.
Rotary planer, 32" Cleveland.
Rotary shear, 44" Lennox.
Rotary shear, No. 6 Quickwork, brand new.
Rotary shear, 30" Quickwork.

Partial list only; own or have selling rights for over 500 machines of every description. Mail us your requirements.

FOR SALE BY

A. M. Stoehr Machinery Co., 418 Mid-City Bank Bldg., Chicago, Ill.

Auto. sc. mch., B. & S. No. 00 $ 375.
Auto. sc. mch., B. & S. No. 0.. 425.
Auto. sc. mch., B. & S. No. 1.. 525.
Bolt cutter, 3-spdl. Acme, 1"... 350.
Boring mill, 12' Niles..... 2500.
Drill, 42" Bickford radial..... 325.
Hand sc. mch., B. & S. No. 1.. 125.
Hand sc. mch., P. & W. No. 2 150.
Miller, 70"x22' Sellers planer type, 5 heads, heavy duty.... 6000.
Miller, B. & S., motor drive..$ 275.
Planer, 56x56x12' Cincinnati... 900.
Press, No. 34 Bliss, arch..... 250.
Press, No. 16 Bliss, horning... 200.
Press, R. & K., dbl. crank, 39" bet. uprights, roller feed, 2½" stroke, wt. abt. 8000 lbs..... 525.
Riveter, No. 4-A High Speed. 275.
Riveter, No. 5-A High Speed. 325.
Saw, 9x9 Sterling, high speed.. 85.

All guaranteed good serviceable condition: write us for other bargains.

FOR SALE BY

Marr-Galbreath Machinery Co., 58 Water St., Pittsburgh, Pa.

Bolt cutter, 1½" Morgan, double hd.
Bolt cutter, 1½" Acme, triple head.
Boring mill, 24" Bullard, side hd. m.d.
Boring mill, 42" Bullard, 2-heads.
Boring mill, 16' to 36' Niles extension.
Boring mill, 144" Betts. 2 hds., m.d.
Boring machine, Rockford No. 2 horizontal, 3⅜" bar.
Bulldozers, Nos. 2, 4, 5, 6 & 28, W.-W.
Channeling mach. No. 3C, K&R.
Derrick, steel, stiff lg. 15-ton, 60' boom.
Drill grinder, "WPEL," 3/60/220.
Forging mach., 3" Acme, steel, m. d.
Forging and rivet header, 1" Ajax.
Gang slitter, 35" cap., feed roll.
Gear cutter, No. 6 Brown & Sharpe.
Grinder, cylinder, Hoenig, portable.
Grinder, No. 18-D Rowbottom.
Grinder. No. 24 Landis, 16"x48".
Grinder. No. 60 Heald, 19" arm.
Hack saw, Atkins, cap. 8"x8".
Hack saws, No. 5 Marvel.
Hack saw, 12x15" Racine, g.b., m. d.
Hammer, 2500 lb. Chbg., s. f. steam.
Hammer, 8000 lb. Chbg. dbl. frame.
Hammers, stm. s. f. 600, 1100, 1500 lbs.
Hammers, 40 lb. and 80 lb. Bradley.
Keyway cutter, 24" Morton, cap. 2½".
Lathe 10'x8½' Myers, chuck att.
Lathe, 12x x5' Star, q. c. g., chuck.
Lathes, 18"x8' L. & S., q. c. g., g. h.
Lathe, 24"x14' Porter, plain change.
Lathe, 26"x10' Walcott, q.c.g., d.b.g.
Lathe, 24"x10' Putnam, taper attach.
Lathes, 48"x36' Niles, belt or motor.
Miller, vertical "C" Becker, s p. d.
Miller, No. 2 B. & S. univ., index hd.
Milling mach., No. 3-B. Milwaukee.
Milling mach., Oesterlein, univ. No. 2
Milling mach., No. 0., Kempsmith universal.
Milling mach., duplex Knight, table 8½"x32".
Motor, 8½ h.p. 220 v., d. var. sp.
Oil separators, ¼ & 1½ bu. cap.
Pinion cutter, No 3 S. & C. 1"x1".
Pipe machine, 6" Jarecki, s. p. d.
Pipe machine, 10" E. C. & B.
Pipe machine, 6" Oster, with dies.
Planer, 48"x48"x16' Pond, 4-hds., m.d.
Planer, 24"x24"x6' Gray, 1-head.
Press, No. 52 Ferracute, punch, m.d.
Punch, 30" thrt., 1"x1" m. d., s. e.
Punch and shear, 30" throat, cap. ⅝"x⅝", s. e.
Punch, coping, steel plate, 13" thrt. 36" die space, 2 holes 1"x1", m. d.
Radial drill, 2½' Fosdick, t. a.
Radial drill, 3' Dreses-Mueller.
Radial drill, 4' Dreses Simplex.
Riveter, Allen jaw, 36" cap. 1½".
Riveter, ½" Shuster rotary, belt.
Riveter, 80 A. Grant, ½" cap. belt.
Roll, angle, No. 24 K. & R., cap. 6x6x1, m. d.
Roll, bending, 6'x½" Bertsch, d. e.
Saw, cold, No. 11½ Higley, cap. 3" rd.
Saw, cold, Wagner, cap. 16" blade.
Saw, band, metal, 30" Wright, cone.
Saw, Burke, 12" blade, capacity.
Seamer, No. 305 Toledo, dbl. 12x14"
Screw mach., 8"&10" P.&W. pl., w.f.
Shaper, 16" Am., b. g., crank.
Shaper, 16" Smith & Mills, vise.
Shaper, 24" Cincinnati, b. g., crank.
Shaper, 24" Niles-Bement-Pond, cr.
Surface plate, 48"x18"x2-½"
Shear, rotary, Quickwork ¼" ga., 36" throat, with 60" circl. attachment, motor, 3 ph., 60 cy. 220 v.
Turret lathe, 13" Gisholt, 2½" h. s.
Turret lathe, 4½" x 30", B. & O., geared head, m. d.
Turret lathe, 28" Gisholt, 3½" h.s., t.a.
Turret lathe, 2"x24", J. & L., s. p. d.
Turret lathe, 18" W.&S. friction hd.
Vise, 8" Columbian, plain.
Wheel press, 60 ton, 30" wheels.

WOODWORKING MACHINES.

Borer, Smith post, No. 451.
Cut-off saw, sw., F.&E. No. 75, m.d.
Jointer, Woods, 8".
Lathe, 18"x12', F.&E., iron bed.
Lathe, F.&E. No 35 auto bk. kf. ga.
Saw filer, band, Wardwell, "K".

USED AND REBUILT MACHINERY

FOR SALE BY

Fitchburg Grinding Machine Corporation, - Fitchburg, Mass.

LATHES.

LeBlond 14"x6'.
Reed-Prentice 16"x8'.
Putnam 14"x8'.
Greaves-Klusman 18"x8'.
Perkins threading 21"x10".
New Haven 32"x12'.

PLANERS.

42"x36"x22' Whitcomb.
32"x26"x16' Whitcomb, 2 heads.
22"x22"x6' Whitcomb.
17"x20"x8' Whitcomb.
30"x30"x8' Powell, 2 heads.

TURRET LATHES.

2½x24" J. & L., chuck equipment.
2½x24" J. & L., bar equipment.
3x36" J. & L., chuck equipment, double spindle.
2½x26" Greenlee.
14" Gisholt.
21" Gisholt.

MILLERS.

No. 5-B Becker.
No. 1 Steptoe.

BORING MILLS.

3"x24" Rockford.
24" Reed-Prentice.

RADIAL DRILL.

2½' Dreses.

FOR SALE BY

Cincinnati Machinery & Supply Co.,
28-30-32 West Second Street, - - Cincinnati, Ohio

LATHES.

48"x13' American, grd. hd., late type.
36"x16' Fay & Scott, l. c. g., tr. grd.
27"x18' Lodge & Shipley.
24"x10' American, grd. hd., s. p. d.
20"x14' Bradford, q. c., late type.
36"x32' Schumacker Boye, q. c.
17"x 8' LeBlond, q. c. g., latest type.
16"x 8' American, q. c. g.
16"x 8' Hendey, yoke head.
14"x 6' Hendey, yoke head.

MILLING MACHINES.

No. 2-B hvy. Brown & S., s. p. d.
No. 2 LeBlond universal, complete.
No. 3 Cincinnati, plain, cone drive.
No. 3 LeBlond pl. miller, latest type.
No. 3 LeBlond universal, cone drive.

GEAR CUTTERS AND GRINDERS.

18-H Gould & Eberhardt hobber.
18" Gould & Eberhardt hobber.
No. 1 Adams Farwell hobber.
72" Cincinnati gear cutter.
Gleason gear generators, 6", 11", 18".
No. 2 Ohio universal tool and cutter grinder.
10"x36" Landis, self-cont., latest.
No. 3 Ohio universal tool and cutter grinder.
No. 21 Besly disc grinder, 36".
No. 41 Besly, 20" disc, direct connected motor.
No. 60 Heald cylinder grinder.

RADIALS AND UPRIGHT DRILLS.

5' American, cone drive.
4' Bickford, tap. att., cone drive.
26" Rockford upright, latest.
28" Cincinnati upright drill.

PLANERS AND SHAPERS.

25" Smith & Mills crank, b. g. cone.
32" Smith & Mills crank, s. p. d.
16" American crank, cone drive.
28" G. & E. crank, high duty, cone.
20" Queen City crank, b. g. cone.
24" Hendey, friction geared.
48"x48"x16' Gray planer, four heads.
60"x60"x20' Cincinnati, planer.
84"x10' Woodward & Powell, 3 hds.

MISCELLANEOUS.

Bolt cutter, 1½" Landis, dbl. spindle.
Boring mill, 10' Pond vertical, modern type, 2 heads.
Boring Mill, 36" Bullard vertical.
62" Niagara pwr. squaring sh., 18 ga.
Keyseater, No. 1 Davis, complete.
Punch press, Bliss No. 19, inclinable.
No. 1½ Bliss toggle press.
Press, No. 164 Toledo toggle, deep drawing.
Punch press, Bliss No. 18, inclinable.
Bay State d. e. punch & shear, ⅝" cap.
Punch and shear, Kling, s. e., ⅝x⅛, 24" throat.
Shear, No. 3 Lenox rotary, ⅝" cap.

Write for our large machinery list. Always in the market for machinery.

USED AND REBUILT MACHINERY

FOR SALE BY

J. E. Haetten & Co., Inc., • 50 Church St., New York, N. Y.

Automatic, No. 24 New Britain serial 5800 threading	$1000.
Automatic, ⅜"-¼" Model B Cleveland, automatic	100.
Barrell, 30x8 Abbott Ball double compartment	150.
Blue printer, 45" Revolute, 110 d. c.	400.
Boring mill, 36" Bullard rapid production, serial 4330, excellent cond.	1200.
Die sinker, No. 2 Pratt & Whitney compound table	500.
Drill, 10 spindle Moline Hole Hog adj. No. 3 m. t.	600.
Drill, 4' Dreses plain radial s. p. gear box	450.
Drill, 12 spindle Baush drill 30" circle 1¼" capacity	800.
Furnace, No. 1A American heat controller. A-1	450.
Lathes, 18"x8' Morris q. c. g. chucks, good	500.
Miller, No. 2V Potter & Johnston, continuous, 98% new	1200.
Planer, 24"x24"x7' Cincinnati planer, 2 heads	750.
Planer, 30"x30"x7' New Haven, 1 head, belt drive	250.
Planer, 96"x96"x20' Pond, 4 heads, motor drive	5000.
Press, No. 56 Toledo, flywheel, s. s., 4" stroke, side shear	1100.
Press, No. 57 Toledo, single geared s. s., 6" stroke, side shear, A-1	1500.
Shaper, 16" Smith & Mills	200.
Turret, No. 1 Warner & Swasey hand operated, good condition	50.

FOR SALE BY

H. R. Irwin Mfg. Co., Front & Pike Sts., Cincinnati, Ohio

Rare bargains—Liquidation from our tool room. Modern, up-to-date tools, guaranteed in fine condition. It will pay you to consider these tools before making a purchase.

Drill press, Champion 20", back geared. Good condition.

Drill press, 4-spindle, high speed, (2) Fine condition.

Engine lathe, LeBlond hvy. duty, 17"x8', standard equipment. All in A-1 cond.

Engine lathe, brand new, LeBlond heavy, 24"x10', pan bed, regularly equipped. Factory price on this tool about $2,700. We are offering it at substantial reduction in price.

Engine lathe, Sidney heavy duty, 17"x8', regular equipment. A-1 condition.

Grinder disc, Besly 20", dbl. end spdl. with table press, all comp. Like new.

Grinder, tool and cutter, No. 2 Ohio, Oesterlein universal. Cond. like new.

Keyseater, Davis No. 1, regular equipment. Like new.

Miller, hand, No. 25 Becker, complete. Like new.

Millers, 7-H Becker Mfg. Condition like new.

Miller, hand, No. 6 Whitney. Fine condition.

Milling machines, Gooley & Edlund, Briggs type. A-1 shape.

Milling machine, No. 0 LeBlond, plain, 4-step cone, for 2½" belt, table 8x34". Fine condition.

Milling machine, No. 4 LeBlond, heavy duty, full universal, with full universal equipment. In A-1 condition.

Milling mche., No. 34 Ohio, Osterlein, pl., table 11½x58", 4-step cone for 3" belt, b. g., q. c., all power feeds to tbl., regular equipment. Fine condition.

Screw machine, hand, Brown & Sharpe, No. 4, wire feed, standard machine. Like new.

Shaper, Cincinnati, back grd., 20", 4-step cone drive. A-1 condition.

Shaper, openside, 26" stroke. A-1 condition.

Turret lathe, flat, Cincinnati-Acme, geared head, 3½x36", with chucking equipment. 95% to 98% new condition.

Turret lathe, 24" Gisholt, 6¾" hollow spindle, 2-step cone, back geared, friction head, std. machine. Late type. In A-1 condition.

Turret lathe, J. & L., geared head, geared feed, 2½x24", with bar equipment. Fine condition.

Turret lathe, Warner & Swasey No. 4, standard machine. Fine condition.

Turret lathe, Warner & Swasey 16", wire feed, auto. chuck, 3-step cone, back grd., friction head, cross slide, 6-hole hex. turret, good assortment of collets. A-1 condition.

These tools are in very fine condition—require no rebuilding and can be inspected under the belts, if desired. They are the kind that will suit the careful buyer, and prices are very attractive. Please send us your inquiries.

FOR SALE BY

J. Bleser Mfg. Co., 16th & Madison Sts., Springfield, Illinois

Air compressor, 12x12 Laidlaw-Dun-Gordon, and 30 h. p., 575 r. p. m., 3-phase electric motor; all for $500.
Lathe, engine, 16x8 G. & K., q. c.
Lathe, 14"x6' Monarch, q. c.
Miller, No. 2 Hendey universal.
Miller, Cinti, No. 3 univ., O. type.
Millers, bench, No. 3 Burke; Rockd.
Radial drill, 5' Bickford.
Shapers, Smith & Mills, 16", 12".

FOR SALE BY

Miles Machinery Co., Saginaw, W. S., Mich.

Automatics, No. 22 New Britain.
Bolt cutters, ½", 1", 1½" & 4" Landis.
Broach, No. 3B LaPointe.
Bulldozer, No. 4 Williams & W.
Die sinker, Nos. 2 and 3 P. & W.
Drill, 24" Cincinnati.
Drill, radial 4', 5', 6' and 8' Western.
Grinder, 18"x96" Norton, s. p. d.
Gear cutter, 48"x10" G. & E.
Gear cutter, 26" Cincinnati.
Gear shaper, No. 61 Fellows.
Hammers, 50 to 150 lb. Bradley.
Lathe, engine, 16"x6' Hendey.
Lathe, engine, 36"x16' Johnson.
Lathes turret, Nos. 2A and 3A Warner & Swasey.
Mill, boring, 42" Bullard.
Mill, hor., 3" and 3½" bar universal.
Millers, Nos. 2BS & 2B Milwaukee.
Millers, universal, Nos. 1, 1½, 2 and 3 B. & S.
Miller, vertical, No. 4 Cincinnati.
Planer, 36"x36"x10' Cincinnati.
Press, No. 18 Bliss o. b. i.
Shapers, 16" Smith & Mills s. p. d.
Welders, arc, 300 amp. Lincoln.

FOR SALE BY

McDonald Machinery Co., 1531-33 N. Broadway, St. Louis, Mo.

Air compressors, Bury 12x12.
Arbor presses, Eames No. 6.
Bolt threader, Acme 3 hds. 1½" cap.
Chain hoists, Yale & Towne 1½ & 2-ton
Demagnetizer, Walker.
Disc grinder, double, Besly No. 14.
Drill, Baush 18-spindle.
Drills, Baker.
Drills, Leland-G. 1, 2&3spdl., h.s., b.b.
Drills, H. & W., Kokomo 1-spdl., Sipp 1 & 2-spdl., h. s., b. b.
Drills, 20", 24", 26 & 28" b. g., & tap.
Filing machine, Rearwin, floor type.
Furnace, Holcroft 92 k.w. annealing.
Gear cutter, No. 3 B. & S., 26".
Gear hobbers, Barber-Colman No. 12.
Grinder, Heald No. 60 cylinder.
Grinders, Ott 5x18"; Blount, 20" wet, (3); Landis No. 1 universal; Modern inte.; LaSalle No. 2 surf.
Hack saws, 4x4, 6x6 & 2 Racine Jrs; Atkins 4x4"; Racine 6x6", h. s.
Keyseaters, Davis No. 1 with cutters; Mitts & Merril No. 3.
Lathes, South Bend 24"x14'; South Bend 21"x12" q. c. g.; Davis 22"x10'; Star 12"x5', tool room; L. & S. 16"x6'; LeBlond 19"x8'; q. c. g. American 20"x9'; Monarch 16"x8', all q. c. g.; 40 other assorted sizes; also Porter-Cable.
Milling machines, Kempsmith No. 2; Ohio No. 20 plain; Becker "SD" vertical, rotary table. 17200 lbs.; American No. 1½ universal; B. & S. No. 3 vert., s p.d., with rotary tbl.; Ohio 34; LeBlond No. 3-H plain; Brown & S. No. 3 pl.; Cincinnati; No. 2 pl. and Becker No. 4-B vert; B. & S. No. 3-B plain, s. p. d.; Kempsmith No. 3 universal; No. 1 Kempsmith plain.
Pipe machine, Curtis 3", motor dr.; Merrill 4" belt drive; B. & K. 8".
Planers, Gray 28"x28"x6', 1 head; Sellers 36"x36"x23', 2 heads.
Punches, Wetterhahn 18", throat ½" in ½"; Williams & White No. 15, double end punch and shears.
Punch presses, Bliss No. 18C; Toledo No. 1; Swaine Nos. 29 and 37 o. b. i. Willard No. 4-A o. b. i.
Pyrometer, Thwing elec., with rec.
Rolls, Bertsch, 4' power.
Screw machine, Gridley 1-spdl. 2½" auto.; Cleveland 1½" auto.; P. & W. No. 2½ hand; Foster No. 3 hand; Woods No. 2 tilted turret head; Foster No. 0; Bardons & O. No. 7; National-A. No. 52 auto., 4-sp., m.d. B. & S. No. 00 automatic.
Shapers, Whipp 16" and 20"; Cinti. 20", b. g.; Ohio 20"; Ohio 16"; American 16" b. g.; S. M. 16"; Steptoe 14".
Square shears, Kutschfield 30" and 60" 14 ga. power.
Shears, 60" thrt. rotary slitting. (2).
Shear, serpentine, Lennox No. 40.
Welders, butt, Federal, ½" rds.

USED AND REBUILT MACHINERY

FOR SALE BY

United Mchry. & Supply Co., 4640 Newberry St., St. Louis, Mo.

Bulldozer, Rock River 20" stroke.
No. 1-B Foster.
Drill, Defiance, No. 23, 10 h. p. a. c.
Miller, No. 1½ American, plain.
Miller, rectangular arm, No. 4.
Miller, No. 2 Kempsmith univ.
Punch, R. R. double end.
Returning tool, No. 1 Sawyer Web
Shaper, 20" American, used 6 mos.
Tool grinder, Wells, like new.

FOR SALE BY

Electric Motor & Machinery Co., 30 So. Clinton St , Chicago
Telephone Franklin 5155

Drill, 20" C.-O. upright, b. g., p. f.
Drill, 22" Superior up., s.h.,b.g.,p.f.
Lathe, 14x6 Sidney, q. c., d. b. g.
Lathe, 14x6 Walcott, q. c., d. b. g.
Lathe, 16x8 Bradford, q. c. g., t. att.
Lathe, 22x8 Hamilton, q. c., d. b. g.
Lathe, 22x10 American, q. c. g.
Miller, No. 2 B. & S.pl.,univ.div.hd.
Miller, Rockford hd., univ. div. hd.
Shaper, 16" Rockford, b. g., s. p. d.

FOR SALE BY

Fitzsimmons & Cole Machinery Company
1208 House Building, - - - Pittsburgh, Pa.

Air compressor, Ing. Rand 6x6, 67'.
Air compressor, Curtis 9x9, 130'.
Bolt cutters, 1½", 2", 2½", 4" Landis.
Boring mill, 30" Colburn, m. d.
Boring mill, 42" Bullard, New Era.
Boring mill, 42" Bullard, b. d.
Boring mill, 12" Betts, 2 hds., m. d.
Boring mill, 16' Niles, vertical.
Bulldozer, No. 27 W. & W., m. d.
Crane, 10-ton Whiting, 52'6" span.
Drill, radial, 6' Prentice, s. p. d.
Drill, 14" Hamilton upright, b. d.
Drill, 24" Cin'ti. upright, sliding hd.
Flanger, McCabe, ½" capacity.
Gear cutters, spur and bevel.
Gear cutter, spur, No. 6 B. & S. 13"x72".
Gear planer, 24" Gleason, bevel,b. d.
Grinder, No. 1 Landis, 10"x20" univ.
Grinder, 16"x68" Landis, crankshaft.
Grinder, 12"x96" Norton, b. d.
Grinder, No. 16 Blanchard.
Hammer, 25-lb. Dupont power, b.d.
Hammer, 100 lb. Bradley, upright.
Hammer, 150 lb Yeakley, pneumatic.
Hammer, 200 lb. Beaudry, upright.
Hammers, 2-B, 3-B & 4-B Nazel.
Hammer, st. forg'g, 1250 lb. Morgan.
Keyseater, No. 0 Mitts & Merrill.
Lathe, 14"x 8' Prentice, g. h., m. d.
Lathe, 16"x 6' L. & S., q. c. g., t. a.
Lathe, 24"x14' Bradford, g. h., m. d.
Lathe, axle, Bridgeford, dbl hd.,m.d.
Miller, univ., No. 3-B Brown & S.
Miller, slab, 24x20x14' Ingersoll.
Miller, slab, 60x54x18' Ingersoll.
Pipe machine, 6" Williams, m. d.
Planer, 36"x36"x10' Cincinnati, 2 hds.
Planer, 48"x42"x12' Cincinnati, 2 hds.
Planer, 48"x48"x16' Pond, 4 hds., b.d.
Planer, 96"x96"x20' Pond, 4 hds., m.d.
Planer, o. s., Cleveland, 36"x36"x16'.
Planer, o. s. Detrick & H., 42"x42"x12.
Planer, rotary, No. 2 Cleve., 48" hd.
Press, Ferracute P-1, 1½" stroke.
Press, geared, No. 34 Toledo.
Press, No. 37½ Bliss, s. s., 6" stroke.
Press, toggle, No. 1½ Bliss.
Press, wheel, 400-ton Niles.
Press, forging, 500-ton United hyd.
Punch, hor., Cleveland, 1" thru 1".
Punch & s., 30" thr., L. & A. 1½" thru 1".
Punch & s., Pels comb., 1½" thru 1".
Riveter, Hanna, 18" thrt., 15" gap.
Riveter, Allen, 66" throat, 15" gap.
Riveter, stake, No. 6 Whiting, 48" thrt.
Rolls, angle bending, 6x6x⅝" K. & R.
Rolls, bending, Niles 10'x⅜", m. d.
Saw, cold, 20" Higley.
Saw, hack, 13"x16" Peerless.
Shaper, 24" Gould & E., m. d.
Shear, double angle, No. 1 L. & A. 1½" thru 1½".
Shear, angle, H. & J., cap. 6"x6"x1".
Shear, alligator, Lewis 1½" square.
Shear, bevel, Lennox ¾".
Shear, guil. No. 0 H. & J., 1½" round.
Shear, guil. No. 3 H & J., 2½" square.
Shear, rot., No. 110½ Bliss, 3/16" cap.
Shear, rotary, No. 3 Quickwork ⅜".
Shear, rotary, No. 6 Quickwork ⅝".
Shear, plate, L. & A. 48"x¼".
Shear, squar. 10"x¼" Cincinnati, m. d.
Shear, squar. 7"x¼" Canton, b. d.
Shear, squar., 30"x18 ga. Toledo, b.d.
Shear, squar., 38"x14ga. Niagara, b.d.
Straightener, bar, No. 3 K. & R.
Straightener, beam, No. 4 H. & J.
Testing machine, 100,000 lbs. Riehle.
Upsetters, 1½" to 5".

USED AND REBUILT MACHINERY

FOR SALE BY

Clark Machinery Co., 1235 St. Clair Ave., Cleveland, O.

Lathe, 24"x16' Schumacher & Boye.
Milling machines, universal and plain.
Planers, 28"x28"x8' and 42"x42"x8' Gray, 2 heads.
Radial drills, 3' American and 3' Prentice.
Screw machines, No. 4 and No. 6 Warner & Swasey.
Shapers, 16" Ohio and 20" Whipp, b. g.
Spinning lathes, Pryibil 18".

FOR SALE BY

Foster Machinery Company, 10203 Quincy Ave., Cleveland, O.

Band saw, 24" woodworking.
Bolt cutter, 1½" Acme.
Boring mill, vertical, 42" Bullard.
Lathe, 16"x6' Monarch.
Miller, No. 00 Brown & S., hand.
Press, No. 3 Stiles.
Punch, EF Cleveland, 72" thrt., m.d.
Riveter, High Speed 2A.
Shear 12"x14 ga., Loy & Nawrath.
Shear, 54"x¼" Bertsch, 15" throat.
Shear, alligator, Canton, cap. ½" sq.
Shear, 36"x18" gap, foot.
Trolleys, I-beam, 1 & 2 ton.

FOR SALE BY

Nelson Machinery Co., 123 N. Pearl St., Green Bay, Wis.

Drill, American 4' radial.
Drill, Barker 25", sliding head, new.
Drills, T. S. twist, new, at half price.
Grinder, crank, Landis 16x68, arranged for plain grinding.
Hack saw, Peerless 9x9, belt drive.
Lathe, Gardner No.4 polishing, b.b.
Press, tire, 44", 150-ton capacity, with 4 piston diff. pump.
Punch & s., Royersford No. 3 dbl.
Punch & shear, single, W-W. No.14.
Tanks, 60x19' pressure storage (2).
Boilers, Engines, Transmission, Woodworking Equipment.

FOR SALE BY

Scott-Banabach Machinery Co., 130 S. Clinton St., Chicago, Ill.

Guaranteed Used Tools.

Auto. sc. mch., B. & S. No. 19. $550.
Auto. sc. mch., B. & S. No. 00. 500.
Auto. sc. mch., B. & S. No. 00. 450.
Auto. sc. mch., B. & S. No. 0... 550.
Auto.sc. mch., Cinti. 5-sp. ¾" cap. 950.
Bolt cutter, 2" dbl. hd. D. & H. 300.
Boring mill, Colburn vert. 30". 350.
Boring mill, Morris horiz., mtr. dr., with motor, 1-15/16" spdl.. 1000.
Drill, Avey 1-spindle, ½" diam.. 200.
Drill, radial, 3½ pl. Fosdick..... 1000.
Drill press, No. 310 Baker, (5) ea. 250.
Drill press, 24" Minster, heavy. 350.
Gear hobber, 72" J-S, 2 d.p. cap. 2500.
Grinder, No. 65 Heald. b. b. spd. 850.
Hammer, 800 lb. Erie board drop, m. d..... 850.
Keyseater, No. 2 Davis, 1" cap. 100.
Lathe, 9"x4' South Bend, pl. ch. 150.
Lathe, 14"x8' Flather, q. c..... 250.
Lathe, 14"x6' Bradford, comp. tool room equip., inc. relieving att. 800.
Lathe, 14"x8' Hendey, taper & c. 500.
Lathe, 16"x6' LeBlond, q. c..... 200.
Lathe, 20"x10' Bradford, pl. ch.. 400.
Miller, No. 0 B. & S., plain..... 150.
Miller, No. 2 Becker vertical... 475.
Miller, 42" Briggs (Gooley & E.) $500.
Miller, auto. P. & W. No. 12 mfg. 600.
Miller, Ingersoll slab 42x36x8.. 2250.
Oil separator, No. 400 Curtis.... 300.
Planer, 16"x16"x42" P. & W., 1 hd. 275.
Planer, New Haven, 24"x24"x6' 500.
Planer, 32"x32"x8' Pond 1 hd... 750.
Planer, 42"x42"x8' Powell, 2 hd. 1000.
Press, No. 5 American Can., o. b. i., plain, 5500 lbs..... 525.
Press, No. 5 Rockford, o. b. i., plain, 7000 lbs..... 675.
Press, grd., No. 8-M American Can, 3" str. 25000 lbs., tie rod. 2000.
Punch, 48" throat Kling, cap. 1"x1½" pl. jw..... 800.
Saw, cold No. 1 Cochrane & Bly 175.
Saw, 6"x6" Peerless high speed 125.
Saw, 9"x9" Peerless high speed 175.
Screw mch. ¾x4" P. & W. comp. 150.
Screw mch. No. 1 W. & S. comp. 125.
Screw mch. No. 10 Foster, 3" cap. 700.
Shaper, 7" Rhodes vertical, on column..... 150.
Shaper, 16" Rockford, b. g. cr... 425.
Shaper, 26" Stockbridge, b. g. crank, h. d..... 600.

FOR SALE BY

F. H. Allen, - - 519 Railroad Ave., Donaldsonville, La.

BORING BAR.

1—Brand new portable boring bar 8'x5"

WHEEL PRESS.

1—Brand new 150 ton wheel press.

These high grade machines will be sold at little over half price.

FOR SALE BY

Syracuse Supply Company, 314 W. Fayette St., Syracuse, N. Y.

Guaranteed NEW MACHINES in original crates at prices below list:

Automatic, 2¾" Gridley, single spdl.
Pipe machine, No. 70 Forbes.
Screw mchs., No. 4 W. & S., g.f.h., (2).
Straightener, No. 2½ Corey.

Exceptional values in USED TOOLS:

Automatic, 1¾" model A., Cleveland.
Drill, 4' Bickford radial.
Drill, 6' American univ. radial.
Drill press, 4-spdl. National sensitive.
Drill, 20" Fairbanks.
Drill press, 22" Prentice, rebuilt.
Grinder, 24" Safety Emery Wheel Co. snag grinder.
Grinder, Taylor & Fenn 20".
Lathe, 16"x 8' American, geared head, rebuilt.
Lathe, 16"x10' American.
Lathe, 20"x12' Reed.
Lathe, 8x60 Fitchburg lo-swing.
Miller, No. 5 Becker vertical.
Miller, Oesterlein universal.
Millers, Wisconsin hand, (3).
Planer, 30"x30"x16' L. W. Pond.
Planer, 60"x60"x22' Niles.
Radial, 5' Pond.
Shaper and slotter, No. 1 Rhodes.
Thread miller, No. 12 Lees Bradner.
Tilted turret, No. 6 Wood.
Turret lathes, No. 4 Foster, (*).
Turret lathe, No. 3 Cincinnati Acme.
Turret lathe, 2½x26 Pratt & Whitney.
Turret lathe, 3x36 Jones & Lamson.
Turret lathe, 2x24 Jones & Lamson.
Turret lathe, 21" Gisholt.
Turret lathe, 24" Steinle.

FOR SALE BY

The Randle Machinery Co., 1733 Powers St., Cincinnati, Ohio

Arbor press, Nos. 3 & 7 Greenerd.
Arbor press, Falls screwed type.
Automatic, 2¾", 3½", 4½" Gridley.
Bolt cutters, 1", 1¼", 2" Acme.
Bolt cutters, 1½", 2" Landis.
Bolt cutter, 4" Acme.
Boring mills, 40" and 42" King.
Boring mill, 42" Bullard.
Boring mill, 60" Pittsburgh.
Boring mills, 60", 72" Niles.
Boring mill, 10' Niles.
Drill, 24" Superior, upright.
Drill, 26" Barnes.
Drill, 3' American plain, g. b.
Drill, 3½' American plain, g. b.
Drill, 3½' Cisco-Mueller plain, g. b.
Drill, 4' Bickford plain, g. b.
Drill, 4' Morris plain, g. b.
Gear cutter, No. 3-H 24" B.&S., auto.
Lathe, 13"x5' Willard, q. c.
Lathe, 16"x8' American, q. c., t. a.
Lathe, 18"x10' LeBlond, q. c.
Lathe, 24"x10' American, grd. hd.
Lathe, 24"x12' Bradford, l. c.
Lathe, 24"x14' Pond, l. c.
Lathe, 24"x24" Fifield, l. c.
Lathe, 28"x16' Bradford, l. c.
Lathe, 27"x18' Lodge & Shipley, q.c.
Lathe, 30"x18' H-S-G, q. c.
Lathe, 36"x30' American, grd. head.
Milling mche., No. 2 LeBlond, pl.
Milling mach., No. 2B B. & S., pl.
Milling mach., No. 4G LeBlond, pl., motor drive.
Milling mach., No. 4 Cincinnati, pl.
Milling mch., No. 33 Kempsmith, pl.
Milling mche., No. 2 B. & S., univ.
Milling mche., No. 2 LeBlond, univ.
Planer, 24"x24"x8' Gray, 1 head.
Planer, 36"x38"x16' Gray, 3 heads.
Planer, 72"x84"x24' D. & H. open-side, 3 heads.
Keyseaters, Nos. 1 and 2 Davis.
Keyseater, No. 6A Mitts & Merrill.
Shaper, 14" Steptoe plain.
Shaper, 16" Queen City, b. g.
Shaper, 20" American, b. g.
Shaper, 24" Cincinnati, b. g.
Pipe machine, 4" Oster.
Pipe machine, 6" Saunders.
Pipe machine, 8" Merrill.
Squaring shear, 3/16"x120" Niagara.
Sq. shear, 3/16"x8' Noy-Nawrath.
Pwr. brake, 10 ga., 8', hand Robinson
Turret lathe, 24" Gisholt, 6¾" bore.
Wheel press, 200 and 250 tons.

Many other toools to offer. Send us your inquiry

FOR SALE BY

Mid-West Machine Tool & Supply Co., Davenport, Iowa

Automatic, ⅜"-1⅛" Cleveland.
Automatics, full, No. 2, No. 0 and No. 00 Brown & Sharpe.
Drills, 4-spdl., 12" and 14" L. & G.
Drills, 6-spindle Allen, h. s.
Gear cutter, 4" Waltham, (new).
Gear tooth rounder, 12" Ingle.
Grinder, No. 10 B. & S. plain.
Grinders, surface, No. 22, Heald.
Hobber, No. 4 Adams.
Miller, No. 13-B B. & S., production.
Radial, 4' American sensitive.
Radial, 4' Mueller.
Screw machines, No. 2 B. & S., p. f.

Partial list; send us your inquiries.

FOR SALE BY

E. L. Klauber Machinery Co., 320 South Third St., St. Louis, Mo.

Brakes, 5' and 10'.
Drill, radial, 42" Bickford.
Drill, multiple, 10-spindle Gardam.
Furnaces, American hardening.
Gear cutter, 32" Whiton.
Gear miller, automatic, 4" cap.
Grinder, Bryant No. 18 internal.
Inside cutting machine, Excelsior No. 11.
Keyseater, Davis No. 2.
Lathes, 12" to 26".
Miller, No. 2 Cincinnati, div. hds.
Millers, hand, No. 0 & No. 3 Burke; No. 23 Fox.
Miller, No. 2 Kempsmith.
Planer, 30"x30"x8' American.
Press, No. 18 Bliss, o. b. i.
Press, No. 19 Bliss, o. b. i.
Press, V. & O. No. 1, o. b. i.
Press, forming, die space 18x42.
Presses, Niagara, foot.
Rivet spinners, Grant, (4).
Saw, 9x9 Atkins Kwik-Kut.
Screw machine, Greenfield ⅝" cap., Superior 1¼" cap., Foster 1½" cap.
Shapers, 14" Rockford; 16" S. & M.
Shear, serpentine, Lenox ¼".

FOR SALE BY

Norton-Broadway Mchy. Co., Sixth & Baymiller Sts., Cincinnati, O.

Good Machine Tool Bargains.

BORING MILLS.

36" Bullard, turret and side head.
42" Bullard, 2 rail heads.
48" Niles, 2 rail heads.
36" Niles, 2 heads.
36" American, 2 heads.
56" Bickford, 1 head.

MILLING MACHINES.

2B Brown & Sharpe, heavy.
No. 3 Brown & Sharpe vertical.
AB Becker vertical.
No. 4 Brown & Sharpe universal.
3—Cincinnati universals, No. 4, no dividing head, $785.

GEAR CUTTERS AND HOBBERS.

26" Brown & Sharpe.
No. 13 B. & S., spur and bevel.
20" Gould & Eberhardt hobber.
No. 4—36" Brown & Sharpe.
30" Gould & Eberhardt hobber.
No. 12 Barber-Colman.

SHEARS AND PRESSES.

Style A Long & Allstatter, shear, 48", ¼" and lighter.
6' Bertsch shear, 18 gauge.
No. 19C Bliss, inc.
6' Robinson brake, power.
8' Robinson brake, power.
No. 30 L. & A. incl., 2250 lbs.
No. 39-A Bliss, motor drive.
Niagara horning press.
No. 1 Long & A. punch and shear.

SHAPERS.

15" Ohio crank; 15" Potter & Johnson crank; 16" Cincinnati, crank, 16" Queen City, crank, 20" Smith & Mills, single pulley; 24" Queen City, single pulley, 25' Smith & Mills crank; 28" Hollingsworth, single pulley.

GRINDERS.

18"x96" Norton plain cylindrical.
6"x20" Webster & Perks.
No. 2 Oakley univ. cutter and ream.
16"x72" Brown & Sharpe.
LeBlond No. 1 cutter and reamer.
14" Pratt & Whitney vertical.

MISCELLANEOUS.

Automatic, 6-spindle New Britain
Gridley, 4-spindle, ⅝".
Gridley 4-spindle, 2½".
J. & L. 2-spindle, geared.
Hammer, 90 lb. Williams & White.

Send for the new catalogue.

FOR SALE BY

Carlson Machinery Co., Inc., - - - Davenport, Iowa

Boring machine, No. 3-A universal.
Boring machine, No. 2 Rockford.
Brake, 72" Peck, Stow & Wilcox.
Centering machine, No. 4 P. & W.
Drill, 21" Canedy-Otto, p. f.
Drill, 25" Snyder, sl. hd. with t. a.
Drill, 36" New Haven.
Drill, 4" Sipp h. s., b. b.
Gear hobber, No. 12 Barber-Colman.
Gear hobber, 24" Schuchardt & S.
Gear cutter, 6-A Cincinnati.
Grinder, 10x20 Landis univ.
Grinder, 6x32 Norton plain.
Grinder, No. 68 Heald cylinder.
Grinder, 24" Norton snagging.
Grinder, 14" Blount wet tool.
Grinder, No. 8 Besly disc.
Grinder, No. 14 Besly disc.
Grinder, No. 2 Oakley univ. t. & c.
Lathe, 13"x5' Sheppard, grd. hd.
Lathe, 15"x6' Rockford, semi q. c.
Lathe, 14"x6' Hendey.
Lathe, 18"x6' Lodge & Shipley.
Lathe, 3½x60 Lo-Swing.
Miller, No. 1½ Cincinnati univ.
Miller, No. 2-B B. & S. pl., s. p. d.
Miller, No. 34 Ohio plain.
Press, No. 29 Swaine, o. b. i.
Press, No. 4 Toledo, o. b. i.
Press, No. 5 Toledo, o. b. i.
Shaper, 16" Ohio.
Shaper, 16" Smith & Mills.
Shaper, 20" Smith & Mills.
Shaper, 20" Cincinnati.
Turret lathe, No. 4 W. & S. plain.
Turret lathe, No. 6 W. & S., p. f. to carriage.

FOR SALE BY

Chas. Molitor Machinery Co., 118-124 S. Clinton St., Chicago, Ill.

MILLERS.

Beaman & Smith vertical & horiz.
No. 3 Brown & S. univ. and plain.
No. 1 Brown & Sharpe vertical.
No. 1½ Brown & Sharpe universal.
Gooley & Edlund, 2 sizes.
No. 2½ Rockford universal, vert. att.
No. 3 Kempsmith plain, (2)
A large variety of smaller sizes.

LATHES.

30"x14' LeBlond, q. c. g., turret a.
24"x12' Bradford, qck. chg. gr.
20"x8' American, q. c. g., taper, relieving attachment.
24"x8' Lodge & Shipley, q.c.g.,taper.
14"x6' Hendey,taper,draw collets,(3)
16"x8' LeBlond, q. c. g.
14"x6' Hendey, geared head, draw collets, oil pan, motor attached.
14"x6' LeBlond & Bradford, q. c. g.
16"x8' Hendey, taper, draw collets.
20"x10' Springfield, geared head.
18"x9' Hamilton, q. c. g.
18"x8' Sidney, q. c. g.
14"x6' Rockford.
14"x6' Bradford, q. c. g., taper, draw collets, reliev. att.
18"x9' Chard, q. c. g., taper, collets.

SCREW MACHINE AND TURRET LATHES

Brown & S. aut., slotting att. (10).
Brown & Sharpe form. machine (15).
Brown & Sharpe semi-automatic (6).
Warner & Swasey Nos. 1 & 6 (6).
No. 2-G Brown & Sharpe auto.
¾", 1¼" & ½" Cleveland automatic.
5-spindle New Britain.

SHAPERS.

24" Gould & Eberhardt, grd. crank.
24" Hamilton, heavy, grd. crank.
24" Potter & Johnston.
16" Hendey-Rockford; Smith & Mills

GRINDERS.

12"x72 Brown & Sharpe cyl.
Nos. 11 and 12 Brown & Sharpe cyl.
6"x32 Norton cyl.
3x18 Norton cyl.
Landis cam grinder.
No. 3 Oakley universal.

PRESSES.

P-201 Ferracute d. b. g., friction attachment, 8" str., extra 24" shaft, weight 44,000 lbs.
No. 5-P Ferracute.
No. 51 Toledo geared.
No. 34 Swaine geared.
No. 71 Swaine, double crank.
No. 1-P Ferracute (2).
No. 1 Cons., No. 3 Niagara.

MISCELLANEOUS.

8' power shear.
18", 24", 30", 40" disc grinders.
High speed drill.
12"x6' key lathe.
Bolt cutter, (6).

Grinders, plain and universal; drill presses, hi-speed and plain; screw machines; punch presses; gear cutter; broaching machines; lo-swing lathes; die slotter; etc. 200 different sizes and makes. Partial list,

FOR SALE BY

Bennett Machinery Co., - 30 Church St., New York City

Boring mache., 4" Betts, knee type.
Boring mch., 3¾" Fitch., knee type.
Lathe, 26/48"x18' McCabe, dbl. sp.
Lathe, 26/48"x14' McCabe, dbl. sp.
Lathes, gap 28/48" 36/60"x14' Harr.
Lathe, 26"x14' R. C., 8 step cone.
Lathe, 24"x12' Amer., q.c.g.5st. cone.
Lathe, 20"x15' Reed, 11' centers.
Lathe, 18"x10' Flather, q. c.
Lathe, 18"x8' Greaves-Klus., q. c. g.
Lathe, 16"x8' Monarch, q. c. g., (3).
Miller, vert. 42"x14' No. 5B Becker.
Multi drill, 6 sp. Baush in circle.
Pipe mch., 8" Saund., m.d.4 yrs. old.
Pipe mch., 4" Landis, m.d. equal new.
Pipe mche., 4" Bignall & K., m. d.
Pipe mche., 4" Curtis & Curtis m.d.
Radial drill, 3½' Mueller, g. b. tap.
Radial drill, sens., 3' American, tap.
Radial drill, 6' Pond, belt. type, hvy.

FOR SALE BY

Harvey Motor Truck Works, 155th St. & I. C. R. R., Harvey, Ill.

Compression coil springs, 3½" to 3¾" outside diameter, 4½ to 6½ working coils. Material flat stock, capacity 600 to 1000 lbs. Free height 2¾ to 4½", (5000), each.....45 cents.
Die head, National Acme Co. 0-64, series 3-H, 22-303.....$ 20.
Dies automatic, Hartness No. 4, manufactured by Jones & Lamson Machine Co., Springfield, Vt. (2), each..... 20.
Drill presses, W. F. & J. Barnes 42". 3¾" spindle for Morse No. 5 taper sleeve, takes 3" drill, without countershafts, (2), each..... 275.
Pipe threading machine, Borden 2½ to 4", power driven. with cutting off tool, without motor..... 275.

FOR SALE BY

Allegheny Gear Co., - - 1011 Empire Bldg., Pittsburgh, Pa.

Blowers, pressure, Amer. Champ.
Broaching mche., No. 3 LaPointe.
Centering machine, No. 1 Whiton.
Drill, 2-D Colburn, 24" swing.
Drill, radial, 5' Reed-Prentice.
Forging machine, 2½" Ajax.
Furnaces, heat treating, annealing.
Gear cutter, No. 3A Cincinnati.
Gear cutter, No. 12 Brown & Sharpe.
Gear hobber, No. 12 Barber-Colman.
Gear shapers, "Fellows" 62, 612.
Gear generators, Gleason bevel, 11", 15".
Grinder, No. 20 Bryant chucking.
Grinder, Landis 12"x66" plain whls.
Grinder, No. 70 Heald internal.
Grinders, wet tool, emery, etc.
Hammers, steam drop, 3000, 2500, 2000, 1500, 1000.
Hammers, steam forging, 2500 double frame 1500, 1100, 800, single frame.
Hoists, portable. Crane.
Lathe, 32"x14' Bridgeford, g. h., t. a.
Lathe, 32"x10' LeBlond, s. b. g., c. r., t. a.
Lathe, 26"x16' 6" Gleason, d. b. g. c. r., t. a
Lathe, 26"x10' Walcott, d. b. g., q. c. g., c. r., t. a.
Lathe, 26"x9' Bridgeford, rev. gr hd.
Lathe, 24"x17' LeBlond, b. g., c. r.
Lathe, 18"x10' LeBlond, b. g., c. r.
Lathe, 16"x8' Hendey, s. b. g., q. c., c. r., t. a.
Lathe, 14"x6' American b. g., q. c., c. r., t. a.
Mill, No. 12 9" for variable sections.
Miller No. 4 Brown & Sharpe univ.
Miller, No. 3 Pratt, hand feed.
Miller, No. 5 Becker, auto. feed.
Miller, No. 6 Becker 62", cone drive.
Miller, No. 4 Pedrick, portable, 12".
Miller, slab. 22"x22"x8' Ingersoll.
Motors, 15, 20, 30, 50 h. p., a. c.
Planer, Bickett 36"x36"x12", m. d.
Planer, 30"x30", table 22"x8', 1 head.
Presses, Nos. 56 and 57 Toledo, trimming.
Presses, No. 74½ Bliss, trimming.
Sand blast, MacLeod, compl. unit.
Saw, cold, Newton 40" blade, motor drive.
Shapers, 28" G. & E. Invincible.
Shaper, 24" G. & E. high duty.
Shapers, 20" Niles-Bement.
Shear, No. 4 Doelger Kirsten, alligator.
Shear, No. 0 Hilles-J., guillotine.
Shear, No. E Long-Alls., guillotine.
Shear, No. 7 Hilles-Jones, comb. punch & shear.
Slotter, crank. cone drive, table 25".
Turret lathe, 24" Gisholt.

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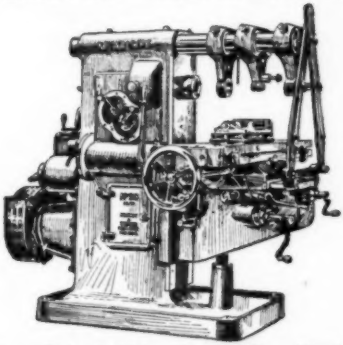

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Only a few left. They will satisfy both your Production and Purchasing Departments. Every machine is completely disassembled, re-scraped, and new parts used wherever needed. They carry the same accuracy guarantee as our new machines. First come, first served. Better write today.

THESE ARE STILL AVAILABLE

No. 2AS Mfg. M. I. B. (Motor-in-Base)
No. 2A Manufacturing
No. 2B Plain
No. 2B Universal
No. 3B Plain
No. 3B Universal
No. 3B Vertical

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MILWAUKEE MILLING MACHINES

KEARNEY & TRECKER

CORPORATION

5926 National Ave., Milwaukee, Wisconsin

Lowest Prices!

and The World's Greatest Stock!

LATHES

48"x40' Pond h. d., triple geared.
42"x22' American geared head, q. c.
36"x30' American geared head, q. c.
36"x20' Niles h. d. triple geared.
36"x12' Bridgeford grd. hd., q. c.
21"x12' LeBlond h. d., q. c.
20"x10' Davis, h. d., q. c.
16"x10' Hendey q. c.
16"x 8' Springfield q. c.
19"x10' LeBlond q. c. production.

MILLERS

No. 3 Brown & Sharpe vertical.
No. 5-C Becker vertical.
No. 5-D Becker vertical.
No. 1 Newton vertical.
No. 7-H Becker Lincoln type.
No. 2½ Hendey Lincoln type.
No. 2A Milwaukee plain.
No. 3 Milwaukee plain.
No. 21 Garvin plain.
No. 20 Oesterlein plain.
No. 25 Oesterlein universal.
No. 29 Oesterlein universal.
24"x24"x12' Ingersoll horiz. slab.

GRINDERS

16"x66" Landis universal.
10"x48" Landis universal.
16"x36" Landis universal.
16"x68" Landis crankshaft.
12"x36" Fitchburg cylindrical.
No. 60 Heald cylinder.
No. 2 Gisholt universal tool.
Yankee drill grinder.
No. 3 Diamond wet tool.

PRESSES

No. E-57 Ferracute 2½" stroke.
No. 58 Toledo, double geared, 4" str.
No. 75½ Bliss trimming.
No. 4 Pratt & Whitney trimming.
No. 5 Crosby Stiles type.
No. 6 American Can inclinable.
No. 4 R. & K. inclinable.
No. 2 L. & A. Style A forming press 12"—100 ton pressure.

PLANERS

60"x60"x18' Pond 2-heads.
48"x48"x18' New Haven 1-head.
48"x48"x 8' Sellers 1-head.
30"x30"x 6' Gray 1-head.
24"x24"x 8' Gleason 1-head.
22"x22"x 5' Gray, 1-head.
F2 Newton planer centers.
F1 Newton Planer centers.

SHEARS

30" M. & H. guillotine, cap. 6"x6".
48" Lewis gate, cap. 1¼".
6' Lennox rotary, cap. ¾".
30" Bethlehem rotary, cap. ¼".
24" thrt. Morgan dbl. end, cap. 1".
No. 7 United alligator, cap. 6"x6".
No. 2 Carlin alligator, cap. 5"x5".

HAMMERS

6000 lb. Chambersburg d. f. steam.
4000 lb. Niles d. f. steam.
2500 lb. Chambersburg d. f. steam.
2000 lb. Chambersburg d. f. steam.
4000 lb. Niles s. f. steam.
1500 lb. Niles s. f. steam.
800 lb. Niles s. f. steam.
3000 lb. Bliss board drop.
2500 lb. Bliss board drop.
2000 lb. Bliss board drop.
1000 lb. Union board drop.
800 lb. Union board drop.
400 lb. P. & W. board drop.
80 lb. Bradley helve cushion.

MISCELLANEOUS

No. 7 Ajax bulldozer.
No. 6 Ajax bulldozer.
No. 4-B W. & W. bulldozer.
2" National d. h. bolt cutter.
6" Bignall & Keeler pipe mchs.
1" National washer machine.
2" National washer machine.
66" Allen air riveter.
No. 4 Langeleir swaging.
10 ton Morgan electric crane, 73'.
10 ton Shaw electric crane 65'.
5 ton Whiting electric crane, 35'.

Machinery Bulletin No. 210, describing our complete stock, mailed free on request.

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35th & Iron Sts., CHICAGO

Entire Plant Equipment At Our Ridgway Works

Many Modern Machines

All Motor Driven Equipment 220 Volt, D. C.

Communicate with our nearest office for prices.

Lathes

13"x5' Blount Speed Lathe, Belt.
18"x8' LeBlond, motor.
19"x8' LeBlond, motor.
21"x10' LeBlond, motor.
21"x22' LeBlond, motor.
26"x17' Pond, motor.
28"x30" Pond, motor.
30"x45' Pond, motor.
36"x18' Pond, motor.
42"x17' Pond, motor.
54"x28' American, motor.

Turret Lathes

2"x26" P. &W., motor.
3"x36" P. & W., belt.
34" Gisholt, motor.

Planers

30"x30"x12' Pond, 4 hds. rev. m. d.
42"x42"x26' Pond, 4 hds. rev. m. d.
48"x48"x20' Pond, 4 hds. rev. m. d.
48"x48"x27' Pond, 4 hds. rev. m. d.
72"x72"x36' Pond, 4 hds. rev. m. d.
96"x72"x25' Pond, 4 hds. rev. m. d.
144"x120"x26' Pond, 4 hds. rev. m. d.
10"x10'x34' Betts, 4 hds. belted m. d.

Upright and Radial Drills

20" Barnes sta. hd. plain, belt.
No. 1 Bement Vert. Cotter, Belt.
No. 2 Bement Horiz. Cotter, Belt.
37" G. & E., motor.
5' Right Line Full Universal motor.
6' Ridgway Plain. motor.

Millers

Whitney Hand, belt.
No. 24 B. & S. Plain, belt.
No. 3-H LeBlond Universal, belt.
No. 4 Cincinnati Universal, motor.
No. 6 Becker-Brainerd Vertical, belt.
6"x132" P. & W. Thrd. Miller, Belt.

Emery Wheel Stands

No. 6 Blount Grinder, Belt.
No. 7 Bridgeport, motor.
12" Ransom, 2 H. P. motor.
24"x4" Ransom, 5 H. P. motor.
18" Grinder and Polisher, belt.
30" Grindstone Frame, belt.

Shapers and Slotters

20" Bement sgl. hd. Shaper, motor.
15" Bement Slotter, motor.
22" Bement Slotter, motor.

Grinders—Cylindrical and Tool

P. & W. Thread Mill Cutter, belt.
LeBlond No. 1 Cutter, belt.
No. 3 B. & S. Cutter, belt.
No. 2 Sellers Tool, belt.
No. 3 B. & S. Universal, belt.
18"x96" Norton Plain, belt.

Gear Cutters

24" Gleason Bevel Planer, belt.
36" No. 4 B. & S. Spur Cutter, belt.
48" Gleason Bevel Planer, belt.
64"x20" G. & E. Spur, belt.

Horizontal and Vertical Boring Mills

3½" Sp. Ridgway Hor., motor.
4½" Spindle Bement Hor., motor.
4½" Sp. Bement Duplex Hor., mtr.
5" Sp. Betts Horiz., belt.
5½" Sp. 80" Bement Horiz., belt.

Miscellaneous

Bement 1100 Lbs. S. F. Stm. Hammer.
48" 200-ton Niles Hyd. Wheel Press, belt.
4" capacity Espen-Lucas Cold Saw
No. 7-B Racine saw, motor.
American No. 4 Oven Furnace.

Foundry Equipment

7'x14' Norcross Jolting Mach.
20" Norcross Jarring Mach.
14"x16" Mumford Molding Mach.
24"x24" Tabor Molding Mach.
Sellers Centrifugal Sand Mixer, Belt.
Whiting No. 40, 36x53" Tumbler, Belt.
20-Ton Std. Worm Gear Ladle.
7'x12'x¼" Air Tank.
Nos. 6 and 9½ Whiting Cupolas.
DA-2 Wilson Elec. Welder, Motor.

Niles 75-Ton 4-Motor Electric Traveling Crane, 49' span, with 10-Ton Aux. Hoist, 3-60-440 A. C. Motors, practically new, located at La Salle, Ill.

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The "BB" Machine Vise

For Use on Miller, Shaper, Planer or Drill

Weight 37 lbs.
Opens 6-inches

Price Only $18.

The top, bottom and sides are accurately machined after assembly.

Well made throughout of good material. Will stand up under hard use.

No well-equipped shop is complete without this modern vise.

A. R. Marsh Machinery Company,

80%

of the business we have received this year has been repeat orders from former customers.

The reason for this is that we are able to give exceptional value for the price asked.

When you place your initial order with us we will give you the kind of service that will make you our customer for life.

(Continued on next Four Pages)

4900 West 73rd St., Cleveland, Ohio

We Have Over 1,000

(Continued from Preceding Pages)

GEAR CUTTERS

36" Brown & Sharpe Automatic Gear Cutter, complete..$ 350.
No. 3 Adams-Farwell Gear Hobber, 28" cap., perf. cond. 850.
No. 6 Fellows Gear Shaper; serial number 5060; used very little, like new..... 450.

BORING MILLS

36" Niles, 2 heads on rail. An old machine but in first-class operating cond. Guaranteed to be accurate..$ 450.
48" Bullard, 2 heads, power elevation, good condition.. 1750.
36" Bullard Maximill. Excellent condition..... 2750.

RADIAL DRILLS

5' Pond Radial, 5 h. p. variable speed, d. c. motor. An old tool, but servicable .....$ 600.
4' Pond, motor drive as above..... 450.
3' American, late type, gear box drive, enclosed head, like new ..... 1650.
4' Dreses, late type, good condition..... 1500.
4' American Sensitive, excellent condition..... 160.

SHAPERS AND PLANERS

24" G. & E. cone drive, thoroughly rebuilt.....$ 775.
20" Smith & Mills, single pulley gear box drive..... 675.
16" Queen City, back geared, like new..... 450.
16" American, back geared, good condition..... 390.
20" Hendey, countershaft and vise, good condition..... 170.
7x7 Pratt & Whitney with motor, excellent condition... 115.
24" Morton Draw-Cut, good condition..... 385.
24x24x6' Pease Planer..... 275.
32x32x8' Cincinnati Planer, 2 heads, excellent condition. 750.
32x32x14' Pond Planer, 2 heads, excellent condition.... 850.

A. R. Marsh Machinery Company,

Items Not Listed Here

MILLING MACHINES

No. 4 LeBlond Universal, heavy-duty, dividing heads, vise, complete equipment. Perfect condition ..... $1160.
No. 2 Brown & Sharpe Universal, cone drive, dividing head, vise, complete equipment, excellent cond. ..... 765.
No. 1 Brainerd universal, dividing heads, vise, complete equipment, good condition ..... 325.
No. 1½ American plain, heavy, grd, feed, vise, ex. cond. 400.
No. 1½ Ohio plain, good working order ..... 195.
No. 2 Cincinnati plain, rebuilt, excellent condition ..... 425.
No. 3 Brown & Sharpe plain, good condition ..... 525.
No. 4 Brown & Sharpe plain, good condition ..... 750.
No. 6 Becker Vertical, late type, heavy-duty, equal to new, circular table ..... 1750.
No. 6 Becker Vertical with circular table, good cond. ..... 800.
No. 5-C Becker Vert. thoroughly reb., circular tbl. like new 725.

PRESSES

Baird Automatic Rolled Feed Press for very small work. Make 100,000 pieces a day. Good condition ..... $ 225.
P-6 Ferracute, Stiles-type; wt. 13,000, Used 1 month ..... 700.
No. 84 Cons. Stiles-type, wt. 4700, good condition ..... 335.
No. 16 Stoll, o. b. i., geared, wt. 6000 excellent cond. ..... 590.
No. 5 Consolidated, o. b. i., wt. 4600, good condition ..... 475.
No. 6 Waterbury-Farrell o. b. i. trimming and stamping, side cutter, wt. 8000. A rugged, unbreakable press in good condition ..... 675.
Bliss triple drawing press, like No. 64, wt. 6000, perfect condition. An exceptional bargain for anyone that can use it ..... 750.
Bliss 3-A Horning, adjustable table, auto. feed, like new 375.
Danielson Gap Press, open-back, grd., wt. 3500, gd. cond. 300.
Large assortment of smaller presses, as well as foot presses.

(Continued on next Two Pages)

4900 West 73rd St., Cleveland, Ohio

Let Us Know Your

(Continued from Preceding Pages)

LATHES

32x16 G. K. geared head, excellent condition	$2500.
42x12 Gleason triple grd., face plate drive, heavy-duty, fair condition throughout. Good for repair shop	550.
24x12 Bradford l. c. grs., taper attach., raising blocks. A thoroughly good lathe and a real bargain at	325.
24x12 Rahn Carpenter l. c. grs., 4-jaw chuck, taper attachment, good condition	450.
21x10 LeBlond heavy duty 3-step cone, dbl. bk. grs., q. c. grs., an excellent tool for	725.
21x8 LeBlond heavy-duty, single pulley geared head, powerful accurate tool for heavy work	750.
20x12 Hendey yoke-head, late number, equal to new, complete with chuck	885.
18x10 Lodge & Shipley dbl. bk. grs., chuck, full equip., taper attachment, good condition	575.
20x10 Prentice single pulley, good condition	500.
18x8 Walcott, heavy-duty, q. c. g., dbl. bk. grs., like new	425.
14x6 Hendey yoke head, late no. like new	650.
14x6 LeBlond q. c. grs., complete equip., good condition	250.
14x6 Prentice l. c. grs., excellent condition	125.

We have a large assortment of lathes not listed from $75. up.

DRILLS

36" Blaisdell p. fd., bk. grs., sl. hd., like new	$325.
28" Superior, p. fd, bk. gears, sliding head, good cond.	270.
25" Snyder, power feed, back gears, slid. hd., good cond.	215.
24" Sibley, sliding head, power fd., back gears, good cond.	175.
24" Mechanics p. fd., bk. grs., slid. head, tapping attach.	275.
25" Barnes, camel-back, all grd., tapping attach., p. f., bk. grs., good condition	325.

A. R. Marsh Machinery Company,

Requirements

4-spindle 22½" Barnes p. feed and bk. grs., on each spindle, individual clutches, good condition	450.
4-spindle 16" Allen high speed, ball bearing, like new	450.
4-spindle 20" Barnes p. fd,, bk. grs., good condition	250.
16" Henry & Wright, high spd., ball bearing, good cond.	90.
3-sp. No. 2 Colburn heavy-duty, with pump, ex. cond.	985.
No. 2 sgl. sp. hvy.-duty Colburn, with pump, ex. cond.	315.

TURRET LATHES AND SCREW MACHINES

24" Libby high power turret lathe, 4⅛" hole thru spindle. Equipped for motor drive but without motor. Good condition throughout. A real buy at	$ 850.
24" Gisholt with new chuck, good condition	650.
3x36 J. & L. late type, 2-spindle, excellent condition	550.
3x36 J. & L. late type, geared feed, bar equipment	425.
3x36 J. & L. geared feed, chucking equipment, like new	400.
2x24 J. & L. geared feed, bar equipment, good cond.	350.
3x36 J. & L. friction feed, chucking equip. good cond.	200.
No. 4 Warner & Swasey universal, practically new	1050.
No. 4 Warner & Swasey, good condition, late no.	500.
No. 6 Warner & Swasey, fine condition, late no.	650.
No. 2 Warner & Swasey, excellent condition	275.
No. 2 SP Garvin, collets and extra equip., like new	275.
No. 4 Bardons & Oliver, good condition	300.

An unlimited assortment of hand, screw, and chucking machines. If what you want is not listed here, write us your requirements.

GRINDERS

No. 60 Heald Cylinder, like new	$ 750.
12x48 Brown & Sharpe plain, like new	700.
8x24 Landis plain, good condition	185.
No. 1 Wilmarth & Morman Tool & Cutter, like new	400.
No. 1 Norton Tool & Cutter, good condition	275.
No. 2 Brown & Sharpe Universal, good condition	375.

4900 West 73rd St., Cleveland, Ohio

Some Big Tools

And Some Big Bargains

1—No. 3 Hilles & Jones Plate Planer 32'-0" long.

1—Set of Niles-Bement-Pond Pyramid Type Bending Rolls, capacity 12' of ¾" plate. Top roll 16" diameter. Bottom rolls 12" diameter, belt drive.

1—Set of Niles-Bement-Pond Pyramid Type Bending Rolls, capacity 12' of 5/16" plate. Top roll 12" diameter. Bottom rolls 9½" diameter. Complete with 15 H. P., 230 volt, D. C. variable speed motor, with starter and control.

1—Joggling Press, Hydraulic, 350 tons capacity.

1—King 42" Vertical Boring Mill, latest type, 2 heads, power rapid traverse, all geared positive feeds.

1—King 40" Vertical Boring Mill, latest type, 2 heads, power rapid traverse, all geared positive feeds.

1—3A Warner & Swasey Universal Screw Machine, with bar and chucking equipment. Serial number over 200,000.

1—Ajax 4" Upsetter 8x56, gear drive wheel, single pulley drive.

1—Chambersburg, 4000 lb. Steam Drop Hammer, practically new.

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SAY! We are not the largest —but Honest and Reliable

With practically no overhead. We can give you a good tool at less money than the average dealer. 100 Tools to select from.

LATHES

12"x5' Pratt & Whitney Tool Room, with pan, 4-Jaw combination chuck, 9 collets, taper attachment. Like new____$490.
13"x6' South Bend, regular equipment. Like new_____ 190.
14"x8' Carroll-Jamieson, quick change gear, semi-enclosed head, screw cutting dial, complete reg. equipment. Fine cond. 250.
15"x6' South Bend, regular equipment. Like new_____ 225.
16"x8' Monarch, q. c. g., screw cut. dial, compl. reg. equip., draw-in chuck 3 collets, for all practical purposes good as new_ 375.
20"x10' Boye & Emmes, quick change gear. Very good cond. 575.

DRILL PRESSES

Sibley, 26" sliding hd., back geared, power fd. Good cond._$225.
Aurora, 24" sliding head, b. g., grd. power feed. Good cond. 190.
Hoeffer, 24" sliding head, b. g., grd. power feed. Good cond. 175.
Cincinnati, 21" sliding head, b. g., grd. power feed. Like new 225.
Rockford, 20" back geared, geared power feed. Like new__ 95.
Henry & Wright, class K, 2 sp., high spd. ball bear. Like new 250.

MILLING MACHINES

No. 12 Brown & Sharpe, plain production. Very good cond._$190.
U. S, Hand Miller, regular equipment. Fine condition_____ 100.
Cincinnati Semi-Auto., with 2 spdls., arr. for straddle, milling and facing connecting rods, table 11"x51". Excellent cond. 450.
Grant, grd. hd., Lincoln Type Miller, tbl. 12"x30", inside oil pockets. A real mche. for hvy. prod. and a bargain for_ 150.

MISCELLANEOUS

Automatic Screw Mche., Cleveland Model A, 2" cap., serial No. 21038. This machine is in good operating condition_$500.
Acme Bolt Cutter, 2-spindle, 1" cap., complete with die hds., and one set of chasers in each head. Very fine cond._ 325.
Rickert & Schafer Tap. Mche., ⅝" cap., on stand. Pract. new 85.
No. 1 LeBlond Univ. Tool Cut. Grinder, univ. equip. Like new 450.
Shaper, 24" American B. G. Shaper. Good cond., real buy at 525.
Steptoe, 14" single geared Crank Shaper. Like new_____ 250.

The Co-Operative Machinery Co.

7514 Indiana Avenue, Cleveland, Ohio

Guaranteed Rebuilt
AT ATTRACTIVE

ENGINE LATHES

14"x 6' LeBlond, l. c. g. and chuck.
14"x 6' Hamilton.
14"x 6' Porter, compound rest and taper attachment, l. c. g.
16"x 8' Lodge & Shipley, old style, compound rest, q. c. g.
16"x 8' Hendey, c. r. and t. a., q. c. g.
16"x 8' Bradford, c. r., loose change gear.
16"x 8' Monarch, compound rest, standard pattern.
18"x 8' Prentice, compound rest, l. c. g., chuck.
18"x 7' Fulton heavy duty friction hd. pl. turning lathe, pan bed, dbl. tool post and countershaft, new.
18" x8' Porter, 4-step cone, s. b. g., q. c. g. engine lathe, complete, new.
18"x 8' Superior, c. r., q. c. g.
18"x10' Star, 4-s. c., s. g., with 16" 4-jaw ind. chuck.
20"x 8' Reed friction head, with turret on carriage.
20"x10' Boye & Emmes, c. r., q. c. g.
24"x10' Greaves & K., c. r., q. c. g.
24"x10' Boye & Emmes, c. r., q. c. g.

TURRET LATHES AND SCREW MACHINES

2"x24' Jones & L. g. h. flat turret.
No. 00 Brown & Sharpe auto.
No. 0 Brown & Sharpe auto., (2).
12" W. & S., friction head.
12" W. & S., friction head, with set-over turret.
14" W. & S., friction head, (2).
16" W. & S., friction head.
No. 4 Warner & Swasey, p. h., a. c. and b. f.
No. 2 Warner & Swasey, p. h., a. c. and b. f.
No. 4 Warner & S., g. f. h., a.c. and b. f.
No. 3 Foster g.f.h. turret screw mch., with p. f. carriage and turret.
No. 55 Nat'l Acme 4-spdl. auto.
2½" Cleveland model "A" auto. screw mch., with 8-hole turret.
1½" Cleveland model "A" auto. screw mch., with 5-hole turret.
18" Libby, factory rebuilt.
No. 2-G Brown & Sharpe automatics (2).
No. 2 Brown & Sharpe turret forming (2).
1"x7" Millholland, pl. hd., auto. ck., bar fd., hand fd., cross slide and turret, complete, new.
1"x7" Millholland turret screw mch., pl. hd. auto. ck., bar feed hand fd. cross slide, with power fd. tur., new.

DRILLING MACHINES

No. 1-S Garvin duplex, (2).
3' American sensitive radial with t. a. and elevating table.
4' Mueller, gear box, sgl. pulley dr.
5' and 6' Americans, tr. grd., 8-speed change, gr. box, sgl. pulley drive.
21" Aurora W. & L., square base, stationary head.
6' Western, with speed box, tap. att.
3' Dreses, cone drive, tap. att.
8' American triple purpose, with speed box.
28" Cincinnati sliding head, b. g. and p. f.
14" 4-spindle Henry & W., h. s., b. b.
12-spindle Moline, cam fd., two tbl.
3-sp. Edlund, high sp., ball bearing.
No. 22 Colburn, sgl. sp., hvy. duty, 1¼" cap., with solid spindle and flange for receiving multiple drill heads, new, (2).
No. 44 Colburn, sgl. sp. heavy duty, 2½" cap., with solid sp. and flange for receiving multiple drill heads, new, (2).
Colburn horizontal duplex drill, 2½" cap. with rotating table, arranged for motor drive, new.
No. 34 Demco high speed bench drill with C spindle, new.

The Strong, Carlisle & Hammond Co.,

Machine Tools——

PRICES ——

MILLING MACHINES

No. 0 Bickett, hand, bench type, (3).
Toledo hand milling machines.
No. 1½ B. & S., cone dr., universal, complete.
No. 1 Brown & Sharpe vertical.
No. 4 Brown & S., cone drive, univ.
No. 3-B heavy B. & S. plain, constant speed.
Type C Becker vertical, constant speed drive.
No. 1½ B. & S. cone drive, univ.
24"x18"x60" Ingersoll, Farwell vertical milling head.
25"x7½"x18" Oesterlein universal, vertical attachment.
No. 1-V Brown & Sharpe plain.
No. 12 B. & S. manufacturing.
13-B Brown & Sharpe, plain manufacturing, (2).

METAL CUTTING TOOLS AND SQUARING SHEARS

No. 3 Atkins band saw, belt driven, new, (2).

GEAR CUTTERS AND HOBBERS

26" No. 3 Brown & Sharpe automatic, (2).

SHAPERS AND PLANERS

16" American, b. g. c., complete.
16" Gould & Eberhardt crank, gear box, single pulley drive.
20" Hendey friction, (2).
16" Smith & Mills, back grd. crank.
22"x22"x 5' Putnam planers, (2).
24"x24"x5' Cincinnati, one head.
30"x30"x10' Woodward & Powell, three heads.
72"x72"x26' Fitchburg, four heads.
30"x36"x16' Cleveland open side, one rail, one side, arranged for mtr. dr.

CENTERING MACHINES

Centering machines, single spindle Cadillac, (2).

GRINDERS

No. 1 Brown & Sharpe universal.
No. 3 Brown & Sharpe universal.
No. 1 Bath universal.
No. 13 B. & S. univ. and tool, (2).
No. 3 Diamond wet tool grinder with drop apron, new.
No. 4 Diamond wet tool grinders with drop apron, new, (2).
No. 10 Brown & Sharpe plain.
No. 14—30" B. & S. plain cyl., (2).
No. 14—48" B. & S. plain, (2).
6"x30" Norton plain, (2).
No. 24 Landis plain.
8" Heald rotary surface grinder with magnetic chuck.
No. 6-A Bryant internal.
No. 1 LeBlond cutter grinder.
J. B. Point "Yankee" drill grinders, complete, new, (2).
Type "DE" Hisey-Wolf internal.
No. 11 Brown & Sharpe pl. grinders.
Plain emery wh'l stand with column.
No. 1 Woods cutter and reamer grinder, complete, new.
No. 2 Woods cutter and reamer grinder, complete, new.
No. 2½ Woods cutter and reamer grinder, complete, new.
20" Whitney wet tool grinders, complete with countershaft, new, (2).
C3A Grand Rapids duplex drill grinders with wet att., new, (2).

MISCELLANEOUS

Bolt cutter, 1" National 2-spindle, with Landis heads.
Boring or drilling machine, No. 1-S Garvin duplex horizontal, (2).
Boring mill, 34" Colburn vertical, swivel turret head.
Boring mill, 72" Niles vertical, two swivel heads.
Broach, No. 2 double Lapointe.
Filing machine, No. 2 Cochrane-Bly.
Marking machine, Etchograph.
Oil extractor, No. 150 Curtis.
Pipe machine, 8" Jarecki, No. 88.
Pipe machine, 4" Oster.
Profiler, No. 12, 2-spdl. P. & W. vert.
Scleroscopes, Shore, (4).

Cleveland, Ohio; Detroit, Michigan

Bath's Guaranteed

Bolt Cutters

1" Acme, belt drive.
1½" Acme, Standard, belt drive.
1½" Acme staybolt cutter.
1½" Landis, sgl. head, with dies.
1¼" Landis, double head, with dies.

Boring Mills—Vertical

44" Baush, 2 swivel heads.
48" Colburn boring mill.
51" Niles-Bement-Pond.
84" Niles-Bement-Pond 4 heads, gear feed.

Boring Mills—Horizontal

3" bar Binsse, table type.
3½" bar Rochester, floor type.

Cranes

5 to 25 ton, all spans, both a. c. & d. c.

Drills

Allen single spindle ball bearing.
4-spdl. Moline rail drill, 1½" cap.
No. 1, 8' wall radial.
30" Cincinnati, sliding head.
30" Aurora, sliding head.
24" No. 25 Foote-Burt, with compound table
3' Western radial drill.
Several 20" and small sens. drills.
3-spindle Barnes drill press.

Forging Machines and Bulldozers

1½", 3½" and 4" Ajax, steel bed.
1½" Ajax, steel bed, universal.
2" Ajax, cast iron bed.
No. 6 Ajax high speed bulldozer.
¾" and 1½" Acme, steel bed.
Nos. 2 and 5 Williams & White bulldozers.
250-ton Mesta steam hydraulic.

Grinders

84" Diamond face grinder.
18x96" Norton plain.
17x36" Landis universal.
No. 20 Safety electric floor grinder, 10 HP motor, 32"x4" wheels.
Various electric floor grinders and grinding stands.
No. 2 Diamond surface grinder.
26" horizontal disc grinder.
No. 1 Besly disc grinder, 12".

Keyseaters

No. 00 Baker, capacity ¾"x8", tilting table.

Lathes

16" to 18"x6'-8' beds, tool room.
20"x10' Boye & Emmes, quick change, double back geared.
26"x14' Greaves-Klusman lathe.
30"x14' Boye & Emmes, double back geared.
36"x14' Schumacher & Boye, triple geared.
42"—60"x34' Houston, Stanwood & Gamble, grd. hd., mtr. dr.
60"x20' American, triple geared.

Tumbling Barrels

Several sets 18"x48" steel lined, square, with roller bearings and exhaust.

CYRIL J. BATH & CO., E. 70th &

Cleveland Stock

Hydraulic Equipment

175-ton R. D. Wood 4-column Flanging Press.
Morgan Hydraulic Riveter, 8' 6" gap.
Wood and Bement-Miles Hydraulic Riveters, 10' 6" gap.
15-ton Hydraulic Mfg. Co. Press.

Milling Machines

Style "B" Gooley & Edlund, table 54"x11½", (2).
20"x7½"x18" Oesterlein plain, belt drive.
No. 1 Rockford plain, back geared, 22"x6½"x15'.
No. 2-B heavy Brown & Sharpe plain, 28"x10"x19".
No. 3 Hendey, geared head, plain.
No. 4 Cincinnati high power miller, table 64½"x16½".
Becker miller, model "C", table 14"x54".
Nos. 2 & 3 Pratt & Whitney Die Sinkers.

Planers and Shapers

22"x24"x57" Fitchburg, single head.
30"x30"x8' Gray, single head.
36"x36"x14' Gray planer, 2 heads.
60"x60"x20' Cincinnati, 3 heads, very good.
48"x48"x14' Hamilton, 4 heads.
12" Springfield, crank shaper.
24" Rockford, Queen City, and Cincinnati shapers.
16" Gould & Eberhardt shaper.
24" Gould & Eberhardt, invincible type.

Punches and Shears

84" throat, Long & Allstatter, capacity about ¾" thru ¾".
Kling Bros. horn press, 60" horn, flywheel 50" dia. 6½" face.
48" throat No. 4 Southwark, capacity 2"x1¼".
48" throat Bement-Miles cap. 1¼"x1".
36" throat Lennox rotary shear, capacity about ½" plate.
15" throat No. 14 Williams & White.
Lennox rotary bevel shear, ¾" capacity.
76" Multiple punch, shear or press, ⅝" capacity.

Turret Lathes and Screw Machines

3"x36" Jones & Lamson.
No. 4 Bardons & Oliver.
6-A and 7-A Potter & J. auto.
1" Garvin screw machine.

MISCELLANEOUS

Acetylene Generator.
Blower, No. 4 Root, motor drive.
Blowers, Nos. 1 & 2 Buffalo Forge.
Chain Hoists, ½, 1, 1½, 4 & 6 ton.
Cold Saw, No. 4 Cochrane-Bly.
Compressor, air, 6"x6" Snider-H.
Gear Hobber, 5-A Lees-Bradner.
Hack saw, power, 5" Victor.
Hammer, 100 lb. Bradley helve.
Pipe Machines, 4" Jarecki, 8" Merrill.
Slotter, 48" Niles-Bement-Pond, motor drive.

Machinery Av., N. E., Cleveland, O.

Unusual Values In

ENGINE AND TURRET LATHES

42"x18' American Tool Works Geared Head, q. c., Triple Grd., Late Type.
26"x8' Walcott Q. C. Lathe.
24"x12' American Tool Works Geared Head q. c. Lathe, Latest Type.
24"x12' Lodge & Shipley Q. C.
24"x10' Lodge & Shipley, q. c., late type.
21"x10' R. K. LeBlond quick change.
30" raised to swing 38"x16' R. K. LeBlond Stan. Change Lathe.
20"x12' Lodge & Shipley quick change.
18"x10' Am. Tool Wks q.c. Latest Type.
18"x10' Am. Tool Wks., grd. hd , q. c.
18"x8' Am. Tool Wks. q. c., latest type
18"x12' Cisco, q. c.
18"x8' Mueller, q. c.
16"x6' Hendey yoke head, q. c., tap. att.
16"x10' R. K. LeBlond quick change.
16"x8' R. K. LeBlond quick change.
16"x6' Monarch quick change.
14"x6' Lodge & Shipley q. c., latest type.
24" and 21" Gisholt Turret, late types.
18" Libby High Duty Turret Lathe, Late Type 3½" Spindle Hole.
3"x36" Jones & Lamson Turret Lathe.
2" Pratt & Whitney Turret Lathe.
Nos. 2, 4, 6 Warner & S. Turret Lathes.
Nos. 2, 4 and 6 Foster Turret Lathe.
No. 4 Bardons & Oliver Turret Lathe.
No. 4 Millholland Turret Lathes.
3¼"x40" Greenlee Turret, bar equip.
No. 4 B & S. wire fd. Screw Mch., rol.fd.
No. 2 S. P. Garvin Screw Machine.

MILLING MACHINES

No. 3-H R.K. LeBlond hvy. duty Univ., cone pulley, complete. Latest Type.
No. 4 R. K. LeBlond heavy duty Univ., cone pulley, complete.
Nos. 1½, 2 B. & S. Univ., cone p., com.
No. 4-B B. & S. pl , sgl. pul., late type.
No. 3-H R. K. LeBlond plain, cone pulley, latest type.
No. 2 Cleve. pl., sgl. pul , sq. over-arm,
28" Cin. semi-auto. Duplex Miller.
No. 5 R. K. LeBlond hvy. duty plain, motor drive, all geared.
No. 4 Cincinnati **High Power** Plain, cone pulley, late type.
No. 3-B Hvy. B. & S. pl. single pulley.
No. 3 B. &S. Pl., cone pulley, Latest ty.
Nos. 1 & 3 Kempsmith Plain, cone pul.
Nos. 2 & 3 Cincinnati Plain, cone pul.
No. 2½ LeBlond Plain, cone pulley.
No. 2 Hvy. B. & S. Plain, cone pulley.
No. 2 Kempsmith Plain, cone pulley.
No. 1½ Cincinnati Plain, cone pulley.
No. 0 R. K. LeBlond Plain, cone pulley.
No. 3 B. & S. vertical, single pulley.
No. 3 Becker Vertical, cone pulley.
No. 21 B. & S. Auto. Milling Mche., single pulley Latest Type.
G. & E. **(Briggs Type)** Mfg. All sizes.
Nos. 0 & 2 Bristol Ball Bear. Hd. Millers.

GEAR MACHINERY AND GRINDERS

No. 12 Barber-Colman Gear Hobber, Late Type, Serial in 1900's.
No. 18-H G. & E. H. D. Gear Hobb.
No. 5-A Lees-Bradner Gear Hobbers, 14 and 19" sizes.
No. 6 Fellows Gear Shapers.
No. 61 Fellows Gear Shaper.
20" Ingle Gear Tooth Rounding Mche.
No. 3—36" No. 3 26" Brown & Sharpe Auto. Spur Gear Cutters, Latest Types.
84" Diamond Face Grinder, arr. for m.d.
No 1½ Walker Single Stroke Surface Grinder, with 10" Diam. mag. chuck.
Nos. 70 & 75 Heald Internal Grinders.
Capital Internal Grinder with collett att.
No. 6 Rivett Internal Grinder.
No. 60 Heald Cyl. Gr., Late Type, com.
No. 6—26" Gardner Disc Grinder.
No. 8-18", 12" 26" Beely Disc.
No. 120—Gardner b.h.d. Disc Grinder.
16"x36" Landis Pl. Self-Cont. Grinder, Lathe Type.
6"x32" & 10"x50" Norton Pl. Grinder.
12"x36" Cincinnati Plain Grinder.
8"x30" Modern Plain Self-Contained Grinder, 95% new.
Nos. 1 & 3 Brown & S. Univ. Grinders.
No. 1 R.K. LeBlond Univ. Tool & Cut.
New Yankee Twist Drill Grinder.
No. 6-60" B. &S. Auto. Spur Gear Cut.
No. 1 W. & M. h.f.,b.b., Surf. Grinder.
No. 13 B. & S. Spur and Bevel Gear Cutter, late type.

EASTERN MACHINERY CO.,

We also Buy machinery.

Rebuilt and Guaranteed Machine Tools

RADIALS AND UPRIGHT DRILLS

5' Reed-Prentice Pl. Radial arr. for m.d.
4' Am. Tool Wks. t.g. Pl. Radial, g.b.d.
4' Cinti-Bickford Pl. Radial, gear box dr.
3½' Cisco-Mueller Plain Radial, motor drive thru gear box.
2½' Carlton b. b. Sensitive Radial, t. a.
3' American Tool Works Sens. Radial, t.a.
Nos. 1 and 3 W. F. & John Barnes Horizontal Radials.
28" W. F. & John Barnes upright Drill Press, Late Type.
3½" Amer. trip. g., pl. Radial, g. b. d.
26" and 30" Snyder, Upright Drill Press.
24" Rockford Upright Drill Press.
No. 30 Natco Multiple Drill Press.
4-spindle Foote-Burt Hvy. Duty Drill.
3-spindle 26" W. F. & J. Barnes Drill.
26" W. F. & John Barnes Upright Drill Press, Late Type.
24" Cinti-Bickford Upright Drill Press.
24" Aurora Upright Drill Press.
22" W. F. & J. Barnes Upright, Drill Pr.
22" Aurora Upright Drill Press, tap. att.
No. 314 Baker Bros. heavy duty Drill.
No. 20 Baker Brothers Automatic Drill with automatic indexing table.
Nos. 0 & 1 Fox Multiple Drill Presses.
Nos. 11 &12 P. & W. Mul. Drill Presses.
No. 41 Natco Mult. Drill Press 8 spdls.
Henry & Wright Class "B" Ball Bearing.
No. ½ Avey Ball Bearing Drill.
1, 2, 3 & 4-spdl. H. & W. B. B. Drills.

SHAPERS AND PLANERS

32" Cinti hvy. duty b. g. Crk. Shaper, m.d.
24" Stockbridge B. G. Crank, power down feed to head.
24" Queen City heavy duty b. g. Crank.
24" Walcott Heavy Duty B. G. Crank,
21" Averbeck Hvy. Duty, b. g. Crank.
20" Cincinnati hvy Duty b. g. Crank.
20" Kelly B.G. Crank Shaper, late type, helical geared and revolving table.
16" Steptoe B. G. Crank Shaper.
72"x54"x12' N. B. P. Planer, 2 hds.
16" Hamilton Heavy Duty B. G. Crank.
15" American Tool Works Crank.
12" Smith & Mills Crank Shaper.
26"x26"x8' Woodward & P. Planer 1 hd.
36"x36"x14' American Tool Works Planer, 2 heads.
38"x38"x18' Niles Planer, 2 Heads.

MISCELLANEOUS

Arbor Press, No. 4 Atlas, floor type.
Arbor Press, No. 55 Atlas, power.
Automatic Machine, 1¼" Cleveland, Model "B"; Late Type.
Bolt Cutter, 1" Acme, class A.
Bolt threading mch., Landis 1" and 1½".
Bolt Threading Machines, 1" and 1¼" Landis, with lead screws.
Bolt Threading Mche, 1" Landis, dbl. sp.
Boring Mill, 24" Bullard vertical, rapid production type with turret and side hd.
Boring Mill, 37" Niles Tool Works Vertical, with 2 swivel heads.
Boring Mill, 51" Niles Vert., 2 heads.
Boring mill, 44" Bausch Vert., 2 heads, power rapid traverse.
Chucking Mch., No. 33 New Britain auto.
Compressor, Steam Drive, 18"x12"x12" Worthington, 2-stage, cap. 700 cu. ft.
Broaching Machine, No. 3-B LaPointe, Late Type.
Broaching Machine, Double Nos. 2 & 3 J. N. LaPointe, Late Types.
Die Sinking Machine, No. 2 Pratt & W.
Driller, Gun Barrell, No. 1 P. & W., 2 sp.
Geared Press, No. 91-B Toledo, double crank, 32" between uprights.
Hack Saws, 6"x6", 9"x9", 12"x12" Racine High Speed Power.
Hammer Riveting, No. 3-H High Spd.
Hammers Helve, Nos. 40 & 60 Bradley, rubber cushioned.
Keyseater, No. 00 Baker, cap. ¾".
Keyseater, No. 2 Davis, cap. ⅝".
Keyseaters, Nos. 0 and 2 M. & M.
Press, Pwr. Forcing, 15 ton Lucas, belt dr.
Press, Power, Nos. 102 & 103 Bliss-Cons., dbl. crank, o. b i., flywheel dr.
Press, Power, No. 19 Bliss, o. b. i.
Presses, Pwr., P-No. 2, P No. 3 Ferracute.
Profilers, No. 12 Pratt & Whitney, 2-sp.
Screw Mch., No. 52 Nat. Acme, auto.
Tapping Mchs., Nos. 1, 2, 2-X and 2 B. G. Garvin Automatic.
Thread Mill. Mch., 4½"x12" P. & W.
Thread Milling Mche., 6"x80" P. & W.

And Many Others. Send Us Your Inquiries.

408 E. Pearl St., CINCINNATI, O.

What have you to Sell?

Machines of Quality

BORING MILLS

24" Bullard V. T. L., New Era Type.
42" Gisholt Rapid Power Traverse, 1 turret head, 1 frame head.
54" Bullard Boring and Turning Mill, rapid production type.
8' Cincinnati Boring Mill, rapid power traverse, 2 swivel heads.
No. 1 Cleveland Horizontal Boring Mill, single pulley drive.
No. 21 Lucas Horizontal Boring Mill, single pulley drive.

DRILLS

Nos. 217, 310, 314 Baker.
No. 32 Natco, arranged for 40 spindles, motor drive.
3½' American Pl. Radial, gr. box dr.
4' Mueller Radial, gear box drive.
2-Spindle Edlund High Speed Ball Bearing.
4-spdl. Allen High Speed Ball Bear.
Single-spindle Henry & Wright High Speed Ball Bearing.

GEAR CUTTERS

36S Gould & E. Spur Gear Cutter.
No. 12 Barber-Colman Gear Hobber.
6" Gleason Bevel Gear Generator.
11" Gleason Bevel Gear Generator.
60" Brown & Sharpe Gear Cutter.
9"x36" Gould & E. Gear Cutter.

KEYSEATERS

No. 0 Baker Keyseater.

GRINDERS

6x32 Norton Plain Cylindrical.
10x50 Norton Plain Cylindrical.
No. 2 Brown & S. Surface Grinder.
No. 22 Heald Rotary Surface Grinder, with 12" magnetic chuck.
No. 255 Heald Rotary Surface Grinder, with 12" magnetic chuck.
No. 33 Abrasive Vert. Surf. Grinder, with generator and magnetic chuck.
10x36 Thompson Universal Grinder.
No. 1½ Cincinnati Cutter Grinder.
No. 1 LeBlond Cutter Grinder.

LATHES

12x5 Hendey, yoke type.
13x6 Willard 3-step cone.
14"x12' Monarch, with draw-in attachment, cone drive.
14x6 Hendey, yoke type, relieving attachment, taper attachment.
14x6 Lodge & Shipley.
14x8 Lodge & Shipley.
16x6 American, cone drive.
18x8 Hendey, taper attachment, 4-jaw chuck, cone drive.
18x8 Lodge & Shipley, 3-step cone drive.
20x14' Boye & Emmes 3-step cone, taper attachment.
24x10' American, 3-step cone.
36x28' Lodge & Shipley selective, triple geared, arranged for belted motor drive, but without motor, tape, attachment.
42"x32' American, triple geared, motor drive; with 35 HP motor, starter.

THE MOTCH & MERRYWEATHER MACHINERY CO.

CLEVELAND

DETROIT CINCINNATI PITTSBURGH

This is a Partial List Of Dependable Machines In Stock

MILLING MACHINES

No. 1½B Milwaukee dble. over arm.
No. 2 Cincinnati Plain, cone drive.
18" Cincinnati, single back geared, 4-step cone, belted power feed.
No. 1-B Brown & Sharpe sgl. pul. dr.
No. 1½ Cincinnati, cone drive.
No. 2 Cincinnati, single pulley drive.
No. 3 Cincinnati Plain Horiz. High Power, single pulley drive.
No. 4 Cincinnati Plain Horiz. High Power, single pulley drive.
No. 1½ LeBlond Universal with dividing head.
No. 4 Cincinnati 3-step cone Universal, with dividing head.
No. 4 Cincinnati, rectangular overarm, arranged for motor drive, but not including motor.

VERTICAL MILLERS

No. 2 Brown & Sharpe, belt drive.
No. 3 Cincinnati high power, single pulley drive.
No. 4 Cincinnati high power, single pulley drive, with motor.

PLANER TYPE MILLERS

24x24x20 Ingersoll, fixed rails, 2 side heads, 1 rail head, arranged for mtr. drive, not including motor.

PLANERS

24"x24"x6' Gray, 1 head on rail.
24"x24"x10' Gray, 1 head on rail.
30"x30"x8' Cincinnati, 1 rail head.
36"x36"x8' Cleveland Open Side, 1 rail head, 1 side head.
36"x36"x10' Cleveland Open Side, 1 rail head, 1 side head, belt drive.
36"x36"x20' Pond Double housing, box table, 2 rail heads, 1 side head.
42"x42"x10' Detrick & Harvey Open Side, 2 rail heads, 1 side head.
48"x48"x12' Cleveland Open Side, 2 rail heads, 1 side head, box table.

SHAPERS

7" Rhodes, with vertical slotting attachment, rotary table, motor drive, with ½ HP G. E. motor.
14" Steptoe, cone drive.
15" Potter & Johnston Universal.
16" Cincinnati, cone drive.
20" Cincinnati, cone drive.
20" Gould & Eberhardt, cone drive.
20" Smith & Mills, cone drive.
20" Steptoe, cone drive.
24" American, cone drive.
24" Cincinnati, cone drive.
24" Gould & Eberhardt.
24" Steptoe.
26" Smith & Mills, cone drive.

TURRET LATHES

No. 3-A Warner & Swasey, arr. with complete chucking equipment.
No. 4 Warner & Swasey.

MISCELLANEOUS

No. 42½-D Pels Beam Shear.
15" Newton Slotter, arr. for variable speed motor drive, without motor.
Pratt & Whitney Twin Spline Miller.
15-ton Lucas Forcing Press.
No. 12 Pratt & Whitney Profiler.
1½" Acme Bolt Cutter, 12 sets of dies.
5-spindle Taylor Horizontal Drill.

Warehouse and Shop Located at

888 East 70th St., CLEVELAND, OHIO

The Motch & Merryweather Machinery Co.

RE-MANUFACTURED MACHINE TOOLS
-(ORIGINATED BY US)-
REG. U. S. PAT. OFF.

Largest stock of high grade machine tools in America. All principal makes and models. Every one guaranteed. Save 25 to 60 per cent on prices.

This is only a partial list. Write for price on any tool you need, whether listed below or not.

IMMEDIATE DELIVERY

LATHES

1—56"-64"x18' Johnson.
1—36"x30' Pittsburgh Geared Hd.
1—30"-34"x12 L. & S. Sel. Hd.
1—26"x16' Bridgeford.
21—26"x10' Canada.
12—25"x12' LeBlond.
1—24"x20' Reed-Prentice, Grd. Hd.
1—24"x12' Reed Prentice Grd. Hd.
9—24"x11' Cisco.
2—21"x10' LeBlond.
1—20"x 8' LeBlond.
1—18"x14' Reed-Prentice Grd. Hd.
1—18"x10' American Grd. Hd.
1—16"x 8' American Geared Head.
1—16"x 8' Monarch.
2—14"x 8' Pratt & Whitney.

MILLERS

1—No. 6 Becker Vertical.
3—No. 3 Brown & Sharpe Vert.
1—No. 2B Milwaukee Vertical.
1—No. 3-B Milwaukee, s. p. d.
2—No. 2-B Milwaukee, s. p. d.
1—No. 2 Cincinnati. s. p. d.
1—No. 2 Rockford, s. p. d.
3—No. 2 Kempsmith.
1—No. 3 Kempsmith Plain.
2—No. 3 Kempsmith Universal.
1—No. 2-A Brown & Sharpe univ.

PLANERS

1—60"x48"x20' Hamilton.
1—42"x42"x22' Niles-Bement-Pond.
3—36"x36"x18' Cincinnati.
1—36"x36"x12' Woodward & P.
1—36"x36"x12' Gray.
1—30"x30"x14' N. B. P.
1—30"x30"x 8' N. B. P.

SHAPERS

1—32" Cincinnati.
1—24" Ohio.

PRESSES

1—96-G Toledo Dble. Crank, 148" between housings.
2—No. 56 Ferracute.

BORING MILLS—Vertical

4—72" Gisholt.
1—24" Bullard Rapid Production.

BORING MILLS—Horizontal

1—No. 3A Universal.
1—No. 0 Giddings & Lewis.
1—No. 32 Lucas.
1—No. 1½ Beaman & Smith.
5—No. 1 Barrett.
6—2" Bar Rockford.

DRILL PRESSES

1—No. 30 Natco.
1—28" Rockford.
1—28" Cincinnati-Bickford.
1—No. 513 Baker.
1—No. 24 Foote-Burt.
2—No. 25 Foote-Burt.
1—3-spindle Henry & Wright.

SLAB MILLERS.

6—24"x24"x12' Ingersoll.
1—24"x24"x 8' Ingersoll.
1—24"x13"x20' Ingersoll.
1—32"x32"x12' Ingersoll.

GRINDERS

2—22" P. & W. Vert. Surf.
1—20"x96" Landis.
3—14"x50" Norton.
3—10"x72" Norton.
3—10"x36" Norton.
6—6"x32" Norton.
2—10"x24" Norton.
3—No. 70 Heald.

Our Guarantee: Your money back if you return a machine within thirty days, freight prepaid.

HILL, CLARKE & CO. of CHICAGO, 645 W. Washington Blvd., CHICAGO, ILL.

Telephone Haymarket 7660 — Cable Address "Remand"

Every Tool In This List Is Priced Right
An Inquiry Will Convince You

LATHES

14"x6' Hendey Quick Change Gear.
14"x6' American Quick Change Gear, Taper Attachment.
16"x6' Bradford Quick Change Gear, Taper Attachment.
16"x6' LeBlond Quick Change Gear.
18"x8' Walcott Semi-Quick Change Gear.
20"x8' LeBlond D. B. G. and Quick Change Gear.
26"x9' Bridgeford D. B. G. and Q. C. G. (Brand New) $1250.00.

PLANERS

26"x26"x8' Gray, one head.
32"x32"x14' Pond, two heads.

PUNCH PRESSES

No. 1 Toledo, Open Back Inclinable.
No. 18½ Holden, Open Back Inclinable.
E. G. 22 Ferracute, Geared Arch.
No. 54 Cleveland, Straight Side.

GRINDERS

No. 60 Heald Cylinder, 36" table and new type fixture.
Greenfield Tool & Cutter Grinder.
No. 1 LeBlond Grinder, plain equipment.
No. 1 Brown & Sharpe Universal Grinder.
No. 3 Modern Universal Grinder.
No. 6 Besly Double Disc Grinder.
No. 10 Besly Disc Grinder, with press.
No. 6 Bryant Chucking Grinders.
No. 75 Heald Internal Grinders.

SHAPERS

24" Queen City, heavy duty, Back Geared.
16" Crank Shaper.

MISCELLANEOUS

2" Pratt & Whitney Spline Milling Machine.
2 Spindle Acme Reversing Nut Taper.
No. 2 Garvin Screw Head Shaving Machines.
1½" Cincinnati-Acme Turret Lathe.
No. 13 Garvin Plain Miller.
No. 14½ Becker-Brainard Universal Milling Machine.
50 lb. Beaudry Upright Compact Power Hammer.
B33 15 ton capacity Metalwood Hydro Pneumatic Press.
No. 22 Rock River Splitting Shear, ½" capacity.
250 lb. Morgan Steam Hammer.
2"x24" J. & L. Flat Turret Lathe, with tools.

Partial list. 150 other tools in stock.

W. P. LITTLE CO.

West 9th & Front Sts. Cleveland, Ohio

LOOK—THESE—OVER

LATHES

16"x10' Cincinnati, q. c.
16"x 6' Hendey, q. c. g.
18"x 8' Bradford, q. c. g.
18"x 8' Reed-Prentice grd. hd.
17x" 8' National, q. c. g.
38"x28' American, geared head.
26"x14' American, l. c. g.
36"x20' Bradford triple gear.

MILLING MACHINES

No. 1½ Cincinnati universal.
No. 3 Cincinnati plain.
No. 1½ American plain.
No. 5 LeBlond plain, motor drive.
No. 3 Brown & Sharpe plain, (2).
No. 3 B. & S. vert., s. p. drive.

RADIALS AND DRILL PRESSES

3' Carlton, G type, gear box drive.
4' Fosdick, s. p. drive.
4' Bickford plain, cone drive.
6' Dreses, motor drive.
20" Barnes Sta. Head, b. g. p. f.
24" Aurora, sliding head.
Demco single.
2-spindle Allen, b. b. sensitive.

PUNCH PRESSES

No. C-2 Ferracute o. b. inc.
No. 18 Bliss, o. b. inclinable, (4).
No. 2½ Consolidated, o. b. inc.
No. 3-A Willard, o. b. inc.
No. 5 Toledo o. b. inclinable.
No. 5 Beauroth o. b. i., geared.
No. 3 Bliss, stiff back.
No. 31 Toledo, stiff back.
No. 17 Williams & White, 24" thr.
No. B Long & Allstatter, 18" thr.
No. 6 Whiting, single end, 12" thrt.
No. 4-P. G. Ferracute press.
No. 6 Waterbury-Farrel, stiff back.
No. 64 Consolidated s. s., 18" bet.
No. 13A—62" Beloit bending rolls, ½" capacity.

PLANERS AND SHAPERS

24"x 6' Powell, 1 head.
30"x 8' Cincinnati, 1 head.
48"x36"x12' Cincinnati, 2 heads.
24" Kelley shaper, b. g.
20" American b. g. shaper.
16" Smith & Mills, cone drive.
14" Gould & Eberhardt shaper c. d.
15" Potter Johnston shaper, s. p. d.
16" Gould & Eberhardt shaper.

GRINDERS

No. 60 Heald, long table, (2).
No. 60 Heald, short table.
Thompson surface grinder.
No. 2 Brown & S. surface grinder.
12x48 Safety surface grinder.
No. 3 Wilmarth & Marmon surface.
Norton tool and cutter grinder.
No. 1½ Cincinnati, t. and c. grinder.
No. 23 Landis, 16x42".
16x68 Queen City plain.

MISCELLANEOUS

Bending rolls, 48" Niagara.
Bolt cutters, 2", 1½" & 1" Acme.
Boring mill, 30" Bullard, cone drive, turret head.
Boring mill, 36" Gisholt turret head, cone drive.
Boring mill, 42" Bullard vertical.
Boring mill, Fosdick 3" horizontal.
Boring mill, 16' Niles, 2 heads.
Chain hoists, various sizes.
Gas furnaces.
15" Gleason gear generator.
Gear cutter, No. 13 B. & S., spur & bevel.
Hammer, steam, 800 lb. Niles.
Keyseater, No. 1 Baker.
Millers, hand, (6).
Presses, 30 & 50 ton Lucas forcing.
Press, 44" Wood hydraulic tire press.
Shear, 60" power square, 14 gauge.
Slotter, 16" Niles vertical.
Tooth rounder, 12" Ingle.
Turret lathe, No. 2 W. & S. (2).

Send for Stock List No. 21

We Buy Modern Machine Tools—What Have You?

The Jones Machine Tool Co.

Front & Pike Sts., Cincinnati, Ohio

Forging, Bolt, Nut, Rivet and Structural Machinery

1", 1½" 2", 2½", 3", 4", 5" Ajax Upsetters.
¾", 1", 1¼", 2½", 3" and 4" Acme Upsetters.
1" and 2" National Upsetters, iron beds.
Nos. 2, 4, 5 and 7 Williams-White Bulldozers.
No. 2 Williams White Vert. Bulldozer, M. D. with motor, new.
No. 29U Williams White Bulldozer, M. D.
50, 75, 100, 150, 200 and 500 lb. Bradley Upright Hammers.
40, 60, 80, 100 and 200 lb. Bradley Cushioned Helve Hammers.
2000 lb. Erie Single Leg Steam Forging Hammer.
800 lb. Chambersburg board drop Hammer.
1300 lb. Miner & Peck, 6 poppet drop hammer.
No. 59¼S Toledo Trimming Press, geared, M. D.
No. 14 Erie Geared Trimming Press, wt. 22,000 lbs.
No. 52 Bliss straight side press.
No. 5 Stiles Single Geared Press, Motor Drive.
No. 2 Doelger-Kirsten Alligator Shear, m. d., cap. 3" round.
1", 1½" 3", 4" Single Spindle Landis Threading Machine.
½", 1", 1½", 2½", 2-spindle Landis Threading Machines.
1½", 2", 2-spindle Acme Class A Threading Machines.
½", 1", 1½" 6 & 8-spindle Vertical Semi-auto. Nut Tappers.
¼", ⅜", ½", ⅝" and 1" Thread Rollers.
11 Waterbury and Manville Cold Headers, 3/16" to 1".
Long & Allstatter Size B Dbl. End Punch, 18" thrt. each end, 2¼" thru 1½".
Rock River Sgl. End Punch, 16" thrt., arch. jaw, cap. ¾" thru ¾".
Beatty Sgl. End Punch, 26" thrt., plain table, cap. 1" thru 1".
No. 6 Whiting Sgl. End Punch, arch. jaw, cap. ¾" thru ¾".
Allen Pinch Bug Riveter, cap. ⅞" rivets.
Allen C Frame Riveter, 26" throat, 15½" gap, cap. 1" rivets.
Long & Allstatter No. 2 Horizontal Punch and Beam Bender.
No. 2 Ryerson high speed Friction Saw, cap. 18" beams.
No. 2 Ajax Hot Saw and Burring Machine.
12' Wall Radial Drill for structural work.
Wagenhorst Blueprinting Machine.
Detroit 5-spindle Semi-automatic Drills.
Baker, R. & L. & Elwell-Parker Elec. Elevating Platform Trucks.

Donahue Steel Products Co.

Specialists in Forging, Bolt, Nut and Rivet Machinery

74th and Ashland Ave., Chicago, Ill.

Attractive Prices To Move Stock

BORING MILLS: Detrick Harvey Post Mill 4⅞" bar.
Niles Post Mill 4½" and 6½" bar.
30" King.
36" American ..... $350.
42" Bullard Vertical ..... 850.
64", 84", and 7' 10" Betts Vertical.

DRILLS: 20" Champion.
6' Drill.
24" Weigel B. G. ..... $350.
24" Sibley B. G.
4' Western Radial, m. d.
8' Pond Radial.

LATHES: 12"x5' Seneca Falls.
16"x9' Chard, h. s., t. s.
16"x8' South Bend.
24"x10' Putnam, t. s.
24"x12' Reed, h. s.
24"x12' New Haven.
26"x16' Prentice, taper attachment.
24"x18' Lodge & Shipley, m. d.
36"x17' Gleason Triple Geared.
42"x16' New Haven triple geared.
48"x36' Niles Triple Geared.
24" Libby Turret.
Lewis Roll Lathes.

MILLING MCHES.: No. 1½B Milwaukee Vertical.
No. 2M Cincinnati and No. 2 Kempsmith Plain.
No. 7-H Becker, Lincoln type.

PUNCH & SHEAR: Canedy-Otto, hand power, ½"x½" ..... $ 45.
No. 5 Long & A., d. e., 10" throats, cap. ⅝" thru ⅞".
No. 45 Buffalo S. E. Punch & Shear.
Cleveland E. F., 36" throat.
No. 2 Hilles & Jones hor. punch, 8" throat.
Beatty s. e., 48" throat, capacity 1¼"x1¼".
Kling Bros. Dbl. Angle Shear, cap. 6"x6"x¾", m. d.

GRINDERS: No. 1 Wilmarth & Morman Surface.
No. 55 Heald Internal and No. 96 Ott Piston.
10"x96" Norton Grinder.
No. 5 Landis Cylinder.
Bridgeport Knife & Drill.

SHAPERS: 24" & 30" Gould-Eberhardt, b. g.
28" Ohio Double Geared.

MISCELLANEOUS: Air Compressor, Chicago 12x14, cap. 275 cu. ft.
Blower, No. 2 Roots Rotary.
Cold Saw, Nutter-Barnes, capacity 4½" round.
Crane, Panama Portable, 2½-ton ..... $ 60.
Crane, Brown 15-ton, 8-wheel locomotive.
Gear Cutter, No. 6 Brown & S., cap. up to 72"x13".
Planers, Cincinnati 48"x44"x12' and 60"x60"x20'.
Planer, Flather 48"x48"x16' heavy duty.
Planer, Cincinnati 42"x36"x12', 2 heads.
Planer, Pond 72"x18', 2 heads.
Planer, Detrick & H. Openside, 96"x72"x26'.
Riveters, Allen Portable Pneumatic; Nutcracker and Horseshoe 9", 25½" & 35" reach.

RUSSELL MACHINE COMPANY

1447 Oliver Building, PITTSBURGH, PA.

NEW 3 PHASE MOTORS CHEAP. 3 H. P. $54.50; 5 H. P. $65.50

LATHES

12"x 5' Cleveland, geared head.
14"x 6' Carroll-Jamieson, new, q. c.
14"x 6' Hamilton, grd. hd., motor dr.
14"x 6' Monarch, quick change.
14"x 6' Sebastian, grd. hd., m. d.
14"x 8' Sidney, double back geared.
14"x 6' Hamilton, style B.
16"x 6' Monarch, motor drive.
18"x10' American, quick change.
20"x 8' American, geared head.
20"x10' Hamilton, rapid production
20"x10' Prentice, taper attachment.
22"x8'6" Greaves & Klusman.
24"x12' Bradford.
24"x24' Prentice, with raising block.
8x60" & 3½x60" Fitchburg, Lo-Swing.

TURRET LATHES and SCREW MACHINES

Acme ⅝" cap., wire feed column.
No. 4 Defiance, 1¼" capacity.
1⅜" capacity Smurr & Kamen.
1½" Milholland.
2x24 and 3x36 J. & L.
No. 1 Foster, 15/16" capacity, (2).
Warner & Swasey No. 2.
No. 52 National Acme.

SHAPERS

14" Niles, traveling head.
14" Steptoe. crank.
16" American tool room.
16" O. & S., b. grd., new, low price.
16" Cincinnati b. g., motor drive.
16" Barker back geared crank.
24" O. & S. back geared crank.

PRESSES

No. 10 and No. 15 Excelsior, foot.
Nos. 5 and 6 Toledo, o. b. i.
Nos. 3-A & 5-A Willard inclinable.
Nos. 1½, 2, 2½ & 4 Robinson, new.
Emco, bench, for radio parts.

DRILLS and RADIALS

No. 1 Baush multiple.
Baush 10 spindle, arranged for 16.
Electric Drills, Black & Decker.
No. 4 Duntley electric.
22", 24", 26", 29" and 32", sliding hd.
6' Ceiling drill.
25" Kokomo high speed.
4-spindle Reed sensitive.
44" Stover.
Hole Hog, No. 66-D, 7-spindle.

MILLING MACHINES

No. 1 Kempsmith universal, new.
No. 2 Kempsmith plain.
No. 3 Kempsmith plain, new.
No. 3 Cincinnati universal.
No. 5-C Becker, vertical.
No. 25 Becker plain, power feed.
No. 2 H Brown & Sharpe plain.
Oesterlein 24x7½x18 plain.
Briggs "A" high duty, 24x8" table.
No. 7 Becker, Lincoln type.

GRINDERS

Nos. 1 & 78 W. & M. surface.
6"x15" Fitchburg plain.
12"x36" Cincinnati universal.
16"x42" Landis universal.
36" and 66" Yates plate.
No. 60 Heald cylinder.
Schmitt cylinder grinder.
No. 3 Ohio universal, tool and cut.
J B X, W. & M. tool and cutter.
No. 10 Besly 18" double disc.
No. 20 Bryant, chucking.

MISCELLANEOUS

Band saw, Clark, compound.
Band saws, Napier 4"x4", 10"x10".
Blower, No. 6 Pequa, pressure.
Blower, positive pressure, Leiman style "F."
Boring mill, Colburn No. 3, tur. hd.
Boring mill, Sellers 50" car wheel.
Boring mill, 72" column.
Boring mill, vertical, two heads.
Brake, 10', 18-gauge metal.
Broaching mchs., 1 and 3 LaPointe.
Compressors, 6x8, 9x8 and 9x8.
Drawing tables, adjust., 42"x8' top.
Gear cutter, No. 3—26 B. & S.
Gear miller, Bilton No. 1.
Hammer, No. 1 Pettingell.
Hammer, 150 lb. Standard drop.
Pipe machines, 2", 4" & 6".
Pumps, Gould triplex, 6½x8".
Punch & shear, ½x½x10" throat.
Riveting hammers, High Speed Nos. 2, 3, 4 & 5-A.
Scale, 1500 lb. Toledo, dial type.
Shear, 60" Peck, Stow & W., 18 ga.
Shear, No. 362 Robinson.
Shear, No. 20 Quickwork, 30" throat.
Shear, circular, Pettingell, 60" thrt.
Tapping machine, Acme 6-spindle.
Threading mchs., W. & P. 2-spindle.

THE OSBORNE & SEXTON MACHINERY COMPANY
COLUMBUS Dept. H. OHIO

Machine Tools Worth While

LATHES

11"x4' Sidney.
12" Pratt & W., tool-room lathe.
14"x6' Hendey precision, t. a.
14"x6' American.
14"x6' LeBlond.
14"x6' Monarch.
16"x6' Hendey.
16"x6' Sidney.
16"x8' Monarch.
18"x8' Hendey.
18"x6' Monarch.
20"x8' Monarch.
22—44"x10' Harrington gap.

MILLING MACHINES

No. 1½ Brown & Sharpe univ.
No. 2B Hendey universal.
No. 2½ LeBlond heavy universal.
No. 2 Cincinnati universal.
No. 2B Hendey plain.
2—No. 2 Cincinnati plain.
3—No. 3 Cincinnati cone plain.
2—No. 4 LeBlond cone plain.
3—No. 2 Kempsmith plain.
No. 3 Cincinnati a. g. vertical.
No. 6 Becker cone vertical.
No. B-1 Becker cone vertical.
2—Hendey duplex horizontal.

DRILLS

4—26" Barnes, b. g., p. f.
24" Rockford 4-spd.
22" Rockford 2-spd.
65-D-5 Moline holehog.
26" Barnes a. g. motor driven.
No. 17 Foote-Burt 5-spd. rail drill.
4' Mueller radial.
3' Bickford radial.
4-spindle Allen, H. S., B. B.
4-spindle H. & W., H. S., B. B.
4-spindle a. g. Barnes, 26".
6-spd. Allen h. s., b. b. drill.

PRESSES

4 No. P-4 Ferracute.
No. 409-B Bliss toggle press.
No. 93-B Toledo d. c. grd. press.
No. 68 Bliss d. a. press.
No. 24 Mich. grd. horning press.
No. 54½ Toledo s. s., s. c. press.
No. 55 Toledo s. s., s. c. press
and many others of all sizes.

TURRET AND SCREW MCHS.

2—No. 1 Foster.
2—No. 2 Warner & Swasey p. h.
No. 6 Warner & Swasey f. h.
2—No. 2 Foster.
No. 3 Foster.
2—No. 4 Warner & Swasey p. h.
3—No. 4 Southwark p. h.
No. 24 New Britain.
3—No. 6A Potter & Johnston.
2¼" Gridley 4-spd.
4¼" Gridley 1 spd. M. D.
2—Jones & Lamson, 2 spd.
3x36 Jones & Lamson, 1 spd.
2A Warner & Swasey universal.

GRINDERS

6—No. 65 Heald cylinder.
3—6x32 Norton plain.
No. 10 Brown & Sharpe plain.
No. 11 Brown & Sharpe plain.
12x36 Queen City plain.
6x36 Landis plain.
No. 2 Bath universal.
No. 2 Brown & Sharpe universal.
No. 3 Landis universal.
No. 15 Bryant internal.
No. 10 Bryant internal.
Worcester internal.
No. 6 Gardner disc.

MISCELLANEOUS

24" G. & E. shaper, cone drive.
24" G. & E. shaper M. D. & motor.
24" Gould & Eberhardt shaper circular table P. F. to head.
36" Bullard vertical boring mill, side head.
30"x30"x8' Wilson, planer.
36x36x12' Bickett planer.
4—No. 1 Garvin vertical tappers.
3—No. 2 Garvin vertical tappers.
10x10 Ingersoll-Rand air comp.
19x14 C. P. air compressor.
24x16 Bury air compressor.
1500 Lb. Chambersburg steam hammer.
2500 Lb. Chambersburg steam hammer.
7500 Lb. Chambersburg steam hammer.
10" Allis Chalmers centr. pumps.
14x16x16 Burnham steam vacuum.

The above is only a partial list—over 3000 machines in stock to pick from.
Send us your inquiries and get our detailed description covering.

Riverside Machinery Depot

251 St. Aubin Ave., Detroit, Mich.

SIMMONS *New and Used* MACHINE TOOLS

ATTRACTIVE PRICES **MONEY BACK GUARANTEE**

TESTED BEFORE SHIPMENT

Drills

1—6′ Niles-Bement-Pond univ.
1—6′ Bickford universal radial.
2—5′ Western heavy duty.
1—4′ and 1—5′ Dreses Radials.
2—4′ Hammond plain.
1—5′ American trip. purpose radial.
1—5′ N.-B.-P. semi-universal.
2—3′ Mueller plain.
1—3′ Western plain.
1—No. 32 Natco, multiple spindle.
1—No. 14 Natco, multiple spindle.
1—No. 4 Baush multiple spindle.
6—No. 13 Pratt & W. mult. spdl.
1—No. 3 Baush multiple spindle.
1—No. 1 Pratt & W., deep hole.
3—42″ Cincinnati-Bickford, s. h.
2—32″ Aurora, s. h.
2—26″ Barnes, all-geared.
5—Four-spindle H. & W. b. b.
3—24″ Cincinnati, s. h., tapping.
1—No. 2 Foote-Bart.
1—3-spindle Allen, ball-bearing.
1—3-spindle H. & W., ball-bearing.
1—No. 1-S Garvin duplex.

Automatics

2—No. 2G Brown & Sharpe.
2—No. 0 Brown & Sharpe.
5—No. 00 Brown & Sharpe.
3—2½″ Gridley, 4-spindle.
6—9/16 Gridley, 4-spindle.
1—1″ Gridley, 4-spindle.
9—2½″ Gridley single spindle.
2—3½″ Gridley single spindle.
4—4½″ Gridley single spindle.
1—No. 6-A Potter & Johnston.

Grinders

2—No. 16 Blanchard vertical.
1—14x96 Norton cylindrical.
1—16x48 Landis crankshaft.
3—14x50″ Norton cylindrical.
6—6x32 Norton cylindrical.
1—14″ Pratt & Whitney vertical.
1—30x84 Diamond face.
2—16x52 Landis plain.
5—No. 70 Heald internal.
6—No. 65 Heald Grinders.
5—No. 60 Heald Grinders.

Boring Mills

6—24″ Bullard New Era.
1—36″ Bullard New Era.

Lathes

5—10x5 Pratt-Whitney tool room.
3—14x6 Hendey tool room.
6—16x6 Hendey tool room.
1—18x8 Hendey tool room.
2—18x8 Greaves-Klusman grd. hd.
1—18x8 Lodge-Shipley heavy duty.
1—18x36x12 Rahn-Larmon gap.
1—20x42x6 Fay Scott gap.
1—24x10 American geared head.
1—25x12 LeBlond heavy duty.
1—26x22 Boye-Emmes motor drive.
1—27x18 LeBlond heavy duty.
2—30x12 American geared head.
1—36x60x12 McCabe 2-in-1.
1—30x14 Lodge-Shipley cone drive.
1—30x20 Pond triple geared.
1—36x29 American geared head.
1—36x70 American geared head.
2—36x20 American geared head.
1—36x60 Bridgeford boring.
1—42x22 American geared head.
8—42x39 Putnam geared head.
1—44x34 Pond triple geared.
1—48x36 Pittsburg motor drive.
2—50x36 Pittsburg geared head.
2—54x34 Bement triple geared.
1—60x35 Bement triple geared.
1—72″x56′ N.-B.-P. triple geared.
1—LeBlond crankshaft.

Millers

1—No. 5 Cincinnati intermittent fd.
1—No. 5 Cincinnati h. p. plain.
1—No. 4 Cincinnati h. p. plain.
1—No. 4-G LeBlond plain.
1—No. 3 Cincinnati h. p. plain.
1—No. 3-H LeBlond plain.
1—No. 2 Hendey geared hd. plain.
1—No. 2—AS Milwaukee pl. new.
1—No. 1 Brown & Sharpe univ.
1—No. 1½ Brown & Sharpe univ.
1—No. 2 Kempsmith universal.
1—No. 5 Brown & Sharpe vertical.
1—No. 4 Cincinnati vertical.
1—No. 4 Cincinnati intermittent fd.
1—No. 3 Cincinnati vertical.
1—Nos. 20 and 22 Garvin vertical.
2—24x24x6′ Ingersoll.
1—48x33x20′ Ingersoll planer type.
1—No. 9-A Lees-Bradner thread.
1—No. 8 Lees-Bradner.

Write for "Simmons Pictorial News"

Simmons Machine Tool Corp.

NEW YORK 149 Broadway — **ALBANY** 1212 Troy Road — **BUFFALO** 88 Exchange St.

Lowest Prices On Record

Covered by Full Guarantee

LATHES

14"x6' Hendey geared head.
16"x6' Hendey yoke head.
16"x8' Hendey geared head.
18"x6' Lodge & Shipley cone.
18"—36"x8' Putnam, gap.
18"x8' American cone.
20"x10' Reed Prentice cone, taper.
22"x12' Reed Prentice cone, taper.
24"x12' Reed Prentice geared head.
24"x14' Boye & Emmes cone, taper.
24"—36"x14' LeBlond, gap.
24"x16' Lodge & Shipley cone, taper.
24"x27' Flather cone (new)
26"x12' Boye & Emmes cone, q. c.
36"—60"x14' Harrington, cap.
30"x16' H. S. & G. cone.
30"—60"x16' LeBlond, gap.
36"x14' Putnam triple geared, cone.
48"x15' Niles cone.
42"x30' Putnam geared head.
No. 4 Warner & Swasey turret.
2x24 Jones & Lamson, s. pulley
3x36 Jones & Lamson, s. pulley.
3" Harkness, double spindle.
26" Libby, s. pulley.
6A Potter & Johnson, s. pulley.

DRILL PRESSES

3' Bickford cone.
3½' Dreses, motor.
4' Western, s. pulley.
4' Dreses, s. pulley.
4' Dreses Universal.
36" Cin. Bick., tap. attach.
No. 30 Natco Multiple Spindle.

BORING MILLS

24" Bullard vertical turret.
34" King, turret head, cone.
42" Gisholt 2 swivel heads, motor.
42" Bullard 1 turret 1 swivel, motor.
52" N.-B.-P. 2 swivel heads motor.
76" Bullard 2 swivel heads, cone.
16' Niles 2 swivel heads, motor.

PLANERS

24"x24x6' Cincinnati, heavy.
42"x42"x10' Belmar, belt.
48"x48"x14' Patch belt.
60"x48"x14' Gray, belt.
60"x24"x14' Pond, belt.
60"x42"x16' Cincinnati.
60"x60"x16' Woodward & Powell.
60"x60"x20' Gray.

MILLING MACHINES

No. 1 LeBlond plain, cone.
No. 1 Milwaukee, plain, s. pulley.
No. 2 Milwaukee, plain, cone.
No. 3 LeBlond plain, s. pulley.
No. 4 Cincinnati, plain, s. pulley.
No. 1B Milwaukee Univ., s. pulley.
No. 1½ Brown & Sharpe Univ. cone.
No. 2 Kempsmith Universal cone.
No. 2 Cincinnati, Universal, cone.
No. 3 Milwaukee Universal, cone.
No. 3A Brown & S. Univ., s. pulley.
No. 2 Brown & Sharpe Vert., s. pulley.
No. 3 Brown & Sharpe Vert., s. pulley.
No. 4 Cincinnati Vert., s. pulley.
30"x24"x12' N.-B.-P. Slab Miller.

GRINDERS

50" Springfield vertical motor.
84" Diamond Surface Grinder.
10x24 Landis, plain.
10x36 Norton plain.
10x50 Norton, plain.
No. 2 Brown & Sharpe Universal.

MISCELLANEOUS

Bending Rolls, 12'x½" Niles.
Bolt Cutter, 2" Acme, 2-spindles.
Chucking Mche, No. 33 New Britain.
Gear Cutter, Spur, 48" Brown & S.
Pipe Machine, 6" Saunders.
Screw Mche., No. 52 National Acme.
Shaper, No. 20 Niles.
Shaper, 25" Smith & Mills.
Shear, Rotary, No. 510 Niagara.

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MACHINE SHOP—Lathes, Grinders, Large Boring Mills, Planers, Drills, Milling Machines, Axle Lathes, Rail Drills, Radials.

WOOD FREIGHT CAR SHOPS—Excellent complete motor driven large equipment thruout.

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Real Values are *Usual* with Morey

BORING MILLS
1—Bullard 24" New Era.
1—Baush 42" vertical, 2-head.
1—Niles 42" vertical, 2-head.
1—Colburn 54" vertical, 2-head.
1—Rockford No. 2 horizontal.
1—Bement-Miles horizontal.

SCREW MACHINES—Automatic
12—B. & S. Nos. 0, 2, 2G auto.
14—Gridley 4-spindle 9/16", ⅝", 2⅛".
10—Gridley 2⅛", 4⅛" single spindle.
13—Cleveland ⅝", ¾", ⅞", 7⅛", "A".
4—Cleveland ⅝", ¾", ⅞", 1⅛"—"B".
1—New Britain 1¼x7. bar.
8—New Britain No. 24.
2—National Acme Nos. 52, 54.
11—P. & J. No. 5-A, No. 6-A.

DRILLS—Multiple Spindle
2—Baush Nos. 2 and 3.
2—Natco Nos. 14 and 11 rect. hd.
7—P. & W. Nos. 11, 12, 13.
1—Moline No. 5-D. 6-spindle.
1—Foote-Burt No. 25.
3—New Garvin 6-spindle

DRILLS—Upright and Radial
2—Allen 4-spindle, h. s., b. b.
2—Colburn Nos. 2 and 4.
1—Barnes 4-spindle gang, 20".
10—Barnes 15", 20", 22".
1—P. & W. No. 1 gun barrel.
1—New No. 3 Turner vertical.
3—Baker No. 310.
2—Cincinnati Bickford 24".
1—Niles 5' semi-univ. radial.
1—American 4' univ. radial.
1—Baush 6' radial.
1—N.B.-P. 96" plain radial.

PLANERS
1—W. & S. 24x24x8', 1 head.
2—Putnam 26x26x8', 2 heads.
1—Gray 38x38x28', 3 heads.
1—Putnam 48x48x12', 2 heads.

TURRET AND SCREW MCHS.
9—Gisholt 24", 6¼" hole.
11—New P. & W. 7/16", ⅝".
4—Greenlee 2½x26.
4—I. & L. 2x24, 3x36.
1—Foster No. 1B.
2—Libby 26", 4⅛" and 7⅛" hole.
1—New No. 4 Millholland.
2—W. & S. No. 4.
6—Foster Nos. 4, 6.
1—Acme Fox Monitor.
1—W. & S. No. 6, b. g., p. f.
2—Gisholt Simplimatics.

MILLING MACHINES
1—Hendey Norton 2-A univ.
1—B. & S. No. 3A universal.
4—Cincinnati Nos. 2 & 3 universal.
1—Garvin No. 1½ univ.
1—Rockford No. 2½ universal.
1—Rockford No. 2 plain.
5—B. & S. Nos. 2, 4, 13-B plain.
1—Hendey Norton No. 3 plain.
1—Kempsmith No. 3 plain.
1—Becker No. 7 duplex.
11—Becker Nos. 3H, 4B, AB, 5C, C1, vertical.
2—Cincinnati No. 4 vertical.
9—P. & W. 4½x12, 6x14, 6x48, 6x80 thread.
1—P. & W. 12" heavy semi-auto.
15—P. & W. 5" automatic.
24—P. & W. 4" spline.

SHAPERS AND SLOTTERS
1—Columbia 28" shaper.
1—Queen City 16" shaper.
1—Rhodes 7" vertical shaper.
4—Dill 15-18" slotters.

PRESSES
5—Bliss No. 52.
1—Toledo rack and pinion.
25—Waterbury Farrel double connection, 2" and 4" stroke.
2—Z. & H. No. 8½ percussion.

BOLT CUTTERS
3—Acme ½" 2-spindle.
1—Landis 1½" double spindle.
3—National 1½", 2-spindle.

GEAR CUTTERS
4—Barber Colman No. 3.
1—Barber Colman No. 12 spline.
7—B. & S. 3x36, 3x26, 4x36, 13H.
6—G. & E. No. 18-H.
20—Fellows Nos. 6, 61, 615.
11—Gleason 6", 11", 18".
1—Gleason 15" spiral bevel finisher.
3—Fellows Gear Grinder.

LATHES
12—Hendey 12"x5', 12"x6', 16"x6'.
4—Seneca Falls 12"x6', q. c. g.
3—Davis 12"x6', q. c. g., m. d.
10—South Bend 13x5, 18x8 gap.
1—Bradford 16"x12'.
1—Fay & Scott 20-42", gap.
1—Whitcomb 24"x18', d. b. g.
1—Walcott 26"x10'
1—Bridgeford 26x12', q. c. g.
1—Greaves-Klusman 26x12'.
1—Johnson 30x12', motor drive.
1—Bridgeford 42x38', geared head.,
3—LeBlond 26x10 duplex crank.
2—LoSwing 3½x84, 2 carriage.
3—Porter Cable.
40—New Star—all sizes.

GRINDERS
4—B. & S. Nos. 10, 11, 12 plain.
4—Cincinnati No. 2, 12x36, plain.
7—Landis 6x18, 10x20, 10x24, 10x36, 12x36 plain.
8—Norton 6x32, 10x36, 16x36, 18x96pl.
1—Queen City 16x72 plain.
1—Landis 10x52 cam.
1—Cincinnati No. 2 universal.

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Good Tools—Priced Right

DRILLS

No. 3 Baush High Speed Multiple Spindle Drill, 20"x40" rectangular head; ten spindles 1¾". Condition good ..... $1000.
28" Barnes Sliding Head, tapping attach., comp. table. Condition good ... 350.
(NEW) 26" Kern Sliding Head, back gear, power feed, tapping attach.... 600.

GRINDERS

Wilmarth & Morman Twist Drill Grinder, motor drive, capacity ½" to 3½". Condition good ..... $ 175.
No. 1 Cincinnati Cutter and Tool Grinder ..... 150.
No. 15 Bryant Semi-Automatic Hole Grinder. Like new ..... 900.
10"x30" Fraser Self-Contained Universal. Condition fair ..... 375.
No. 190 Greenfield Universal Cutter and Tool. Condition good ..... 150.
No. 5 Oliver Twist Drill, motor drive, capacity ¼" to 2¾". Like new... 450'
6"x32" Norton Plain Grinder. Condition good ..... 400.
No. 10 Brown & Sharpe Plain Grinder, 6"x20". Condition good ..... 125.
No. 11 Lumsden Plain Ball Bearing, with cup wheel. New ..... 275.

MILLERS

No. 6 Whitney Hand Miller. Condition good ..... $ 150.
No. 10 Pratt & Whitney Hand Miller ..... 150.
No. 3H LeBlond Plain Cone Type Miller. Like new ..... 1300.
No. 0 Brown & Sharpe Plain Miller. Condition good ..... 300.
No. 0½ LeBlond Plain Miller ..... 400.
No. 32 Kempsmith Miller. Condition good ..... 350.
Briggs Type A Miller, 16" table feed. Condition good ..... 250.
No. 2 Knight Vertical Miller ..... 600.
No. 3 LeBlond Universal Miller ..... 1300.

SAWS

No. 15 Lea-Simplex Type BB Cold Saw. Condition very good ..... $ 600.
20" Silver Belt Drive Band Saw ..... 65.
6" Napier Metal Band Saw ..... 150.

TURRET LATHES AND SCREW MACHINES

No. 3 Warner & Swasey Plain Head Screw Machine ..... $ 175.
Defiance Hand Screw Machine 16" swing, pan bed, friction head ..... 350.
No. 6 Brown & Sharpe Turret Screw Mche. with roll fd. Condition good 800.
No. 2 Warner & Swasey Hollow Hex. Srew Machine ..... 400.
18"x15" Pratt & Whitney Turret Screw Machine. Condition good ..... 500.
No. 3 Foster Turret Lathe. Condition good ..... 300.
No. 3 Foster Turret Lathe with auto. Chuck. Condition good ..... 300.

MISCELLANEOUS

LaPointe (Hudson Mass.) Broaching Machine, with 2" diameter screw 48" long. Condition good ..... $ 300.
4" Hurlburt-Rogers Cone Type Cutting-Off Mche. Condition very good.. 250.
No. 425 Standard Fuel and Engineering Company High Speed Furnace, with heating space 9"x14" ..... 75.
24" G. & E. Gear Hobber. Cap. 24"x10"x5", 6-pitch. Condition fair.. 325.
18" Gleason Bevel Gear Generator. Condition good ..... 800.
No. 6 Fellows Gear Shaper ..... 500.
No. 5 Williams-White Drop Hammer. Weight of ram 600 lb. ..... 350.
No. 1 Gray Sheet Metal Cutter, cap. 3/16"; depth of throat 34". Like new 400.
No. 1 National Acme Screw Slotter. Condition good ..... 125.
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Peninsular Machinery Co.

429-431 Jefferson Ave. E., DETROIT, MICH.

WAYNE Greater Values

10"x 4' Seneca Falls Lathe, pan bed	$ 90.
11"x 4' Oliver, Geared Head, motor driven	200.
14"x 6' Sidney Lathe, q. c., 3-step cone, double back gear	250.
16"x 6' Flather	75.
16"x 9' Chard Lathe, q. c., 3-step cone, double back gear	425.
16"x 6' Pratt & Whitney Geared Head, taper	600.
24"x12' Pond Heavy, quick change	450.
24"x12' Carroll-Jamieson, 3-step cone, semi-quick change	400.
26"x12' Lodge & Davis 5-step cone, taper	350.
3x36 Jones & Lamson Chucking	300.
3' American Radial, cone drive	475.
4' Bickford, single pulley, gear box	650.
Davis & Egan Universal Miller	350.
No. 3 Kempsmith Plain Miller. Late type, 95% new	750.
No. 3 Brown & Sharpe Universal, complete	1000.
16" American Crank Shaper	400.
24" Gould & Eberhardt, geared crank	750.
24" Walcott Geared Crank	875.
No. 3 Adams-Farwell Gear Hobber	500.
10' Niles Heavy, Vertical Boring Mill	3500.
42" Throat Lenox Splitting Shear, ¼" capacity	600.

WAYNE MACHINERY CO., Fort Wayne, Indiana

Motors—Direct Current—550 Volt

Having changed our mill power from Direct Current to Alternating, we have for sale the following motors which were abandoned, but which were all in good operating condition at the time of their removal last Spring:

NO.	H. P.	R. P. M.	MAKE	TYPE	PRICE
1	200	300	G. E.	MPC—6	$2000.
2	200	300	G. E.	MPC—6	2000.
3	30	1025	G. E.	CL—6	300.
7	15	1150	W. H.	S	50.
8	10	1050	Woods	ML	100.
11	10	900	G. E.	RC	150.
12	15	900	G. E.	RC	200.
13	40	975	G. E.	CL	300.
16	50	1150	Allis		400.
17	10	1250	G. E.		100.
20	5	1200	G. E.		35.
21	2½	1425	Fairb.		25.
23	75	775	W. H.	S	600.
24	8	1600	G. E.	MP.	40.

All prices include starting boxes, pulleys, and, in most cases, slide rails, and are F. O. B. Salina, Kans.

THE SHELLABARGER MILLS, Salina, Kans.

WE ARE GOING TO MOVE

Prices Reduced to avoid handling costs!

Really an opportunity to fill your machinery needs at prices as low as 25% of new, all Rebuilt and Absolutely Guaranteed.

Established 1900—27 Years of Service!

PARTIAL LIST

LATHES AND BORING MILLS

38"x16' Pond Lathes.
26"x12' Putnam H. D. Lathe.
18"x8' Mueller Q. C. G.
18"x8' Cisco Geared Head Lathe.
13"x21"x8' Star Gap Lathe.
14"x6' and 8' Carroll Jamieson Q. C. G. (4).
28" Gisholt Turret Lathe, Belt Driven.
4" Horizontal Boring Mills.
42" Bullard Vertical Boring Mills.
37" Baush Vertical Boring Mill.

MILLERS AND GRINDERS

No. 4 Cincinnati Plain Miller.
No. 3 Kempsmith Plain Miller.
No. 3 Kempsmith Universal Miller.
No. 3 Becker Vertical Miller.
No. 2½ LeBlond Plain Miller.
No. 2 Kempsmith Plain Miller.
No. 1 Cleveland Plain Miller, S. P. D.
No. 13 Garvin Plain Millers, (2).
4"x30" P. & W. Cylindrical Grinder.

PNEUMATIC RIVETERS

Allen, 72" reach, 12" gap, 10" cyl.
Allen, 36" reach, 12" gap, 10" cyl.

RADIALS AND DRILL PRESSES

6' Bickford Plain Radial Drill.
4' American Sensitive Radials (3).
Barr 6-Spindle Sensitive Drill.
6 Spindle Gardam Multiple Drill.
No. 25 Foote-Burt Hvy. Duty Drill.
24" Weigel Sliding Head Drill.

PLANERS

24"x24"x10' Chandler Planer.
36"x30"x16' Whitcomb-Blaisdell.

HAMMERS—PUNCHES AND SHEARS

1100 lb. Bell Steam Forging Hammer.
1100 lb. N. B. P. Forging Hammer.
2000 lb. Bell Steam Forging Hammer.
200 lb. United Upright Pwr. Hammer.
200 Beaudry Upright Pwr. Hammer.
40 lb. Bradley Helve Hammer.
36" Cleveland Style FF Punch & S.
36" Ironton S. E. Punch & Shear.
20" Hillis & Jones S. E. Punch & S.
Kling ¾" Rotary Splitting Shear.

MISCELLANEOUS

24" Brown & Sharpe Gear Cutter.
No. 3B LaPointe Broaching Machine.
4"—6"—8" and 12" Pipe Machines.

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AUTOMATIC CHUCKING MACHINES.

2—No. 6A Potter & Johnston.
2—No. 7A Potter & Johnston. All arranged for Motor Drive. Complete Equipment. Like New.

MILLING MACHINES

1—No. 2 B S Milwaukee plain, double over arm, nearly new.
1—No. 3 Cincinnati plain, single pulley drive.
1—No. 2 Cincinnati pl., cone. dr.
6—No. 1 Milwaukee pl.,sgl.p.dr.
1—Model B Becker vertical.

PLANERS and SHAPERS

1—30"x30"x16' Gray planer, 3 heads, spiral gear drive.
1—20"x20"x5' Whitcomb planer, second belt drive, single head.
1—21" Smith & M. b. g. shaper.
1—16" Gould & E. shaper,bk.gr.
1—24" Hendey friction shaper.
1—16" Cincinnati bk.grd.shaper.
2—16" Whipp bk. geared shapers (brand new).

MISCELLANEOUS

1—No. 3 Barber-C. gear hobber.
1—No. 12 B. & S. plain grinder, capacity 8"x36", late type.
1—6"x80" P. & W. thread miller.
No. 10 Brown & Sharpe plain grinder, capacity 6"x20".
1—42" Bullard vertical boring mill, 2 swivel heads.
1—Lucas horiz. boring, milling and drilling machine, 3" bar, single pulley drive.
1—No. 4 Warner & S. tur. screw mche., 1½" bar cap., bar feed attachment, power feed to tur. and cut off slide, 14 collets.
1—No. 1 Brown & Sharpe Wire Feed Screw Machine.

We have 500 other machines in stock. If you do not see it listed, send us your inquiry.

New Jersey Machinery Exchange
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Slightly Used and Rebuilt Tools

At Bargain Prices

1—No. 4 Colburn Single Spindle Mnfrs. Drill, with pump, capacity 2".
1—No. 310 Baker Bros. High Spd. Hvy. Duty Sgl. Spdl. Drills, rebuilt.
1—No. 2, Pfauter 39¼", cap. 2½ d. p., auto. Gear Hobbing Mch., 90% new.
1—16"x7' Hendey, cone type, tie bar head, q. c. g., oil pan, compound and taper.
1—3" Hendey Centering Machine.
1—No. 3-G Hendey Plain Milling Mche., geared spdl., sgl. pulley drive.
1—2¼" Milholland Latest Style Geared Friction Head Turret Screw Machine, automatic chuck, bar feed, power feed to turret, oil pan, pump, master collet and assorted bushings, 90% new.
1—1½" Acme Single Class-A Bolt Cutter, with Chasers.
1—100 lb. Little Giant Power Hammer.
1—No. 246E—Type C. N. E. Schatz Plate, Structural Steel and Miter Shear, Universal Punch and Coping Machine, motor driven; cap. plate shear, ¾"; rd., 1¾"; square, 1 9/16"; punch, 1 3/16" in ¾"; 90% new, made of Siemans-Martin Steel.

The W. M. Pattison Supply Co.
General Offices and Warehouse, Cleveland, Ohio

All of these machines are first class—condition excellent

SCREW MACHINES

1 No. 00 Brown & Sharpe Automatic, Serial 5803.
2 ⅜-½" Model B Clevelands, Serials 24196, 24198.
5 ⅜-½" Model A Clevelands, Serials 22928 to 30920.
1 No. 0 Brown & Sharpe hand screw machine.
2 No. 1 Brown & Sharpe hand screw machines.
3 No. 1 Garvin hand screw machines.
6 No. 4 Milholland hand screw machines.
1 2½" Gridley multiple spindle, Serial 9186.

PRESSES AND PUNCHES

1 250 Ton Ferracute embossing press.
1 No. 126B Max Ams inclinable, 2" stroke.
1 No. 3 American Can inclinable, 2½" stroke.
1 No. 20 Bliss inclinable, 2" stroke.
1 No. 32 Michican solid back, stroke 1⅜".
1 No. 93 Consolidated solid back, stroke 1½".
1 No. 5 Long & Allestatter single end punch, 4" throat.
1 Style E Rock River punch, architectural jaw.

DRILLS

1 20" Barnes back geared with tapping attachment.
1 28" Hamilton, back geared, sliding head.
1 36" Cincinnati back geared, sliding head, tapping attachment.
1 36" Cincinnati Bickford radial, gear box drive.
1 No. 4 Quint turret drill.
1 No. 513 Baker drill, 5" capacity in steel.

TURRET LATHES

2 21" Gisholt lathes, late type.
1 21" Libby full swing, 4⅛" hole.
2 No. 6 Foster friction head, power feed turret.

MILLING MACHINES

1 10 Kempsmith hand miller, lever feeds.
2 No. 0 Brown & Sharpe millers.
3 No. 25 Becker plain millers.
1 No. 2 Cincinnati universal, with index centers.
1 No. 3 Cincinnati plain miller, all feeds.
1 No. 3 Kempsmith plain miller, all geared feeds.
1 No. 3 LeBlond plain miller, vertical attachment.
1 No. 3 Cincinnati high power vertical, arranged for motor.
2 No. 5 Becker vertical millers.
1 No. 6 Becker vertical miller, 60" feed.

OF SPECIAL INTEREST

146" Streine 10 ga. under drive shear, NEW, never used.
16" Smith & Mills b. g. shaper, very good condition.
No. 2 Reid Auto. surface grinder, mag. chuck.
No. 6 72" Brown & Sharpe gear cutter.
No. 1 Rockford plain miller, dividing head, swivel vise.

A. D. White Machinery Co.

108-114 N. Jefferson St., Chicago, Ill.

MORRIS OF NEWARK

LATHES: .....Six 36"x16' Niles-Bement-Pond Screw Cutting Lathes, quick change gears, geared head with motor mounted on head.

TURRETS: .....Four 24" Gisholt Turrets, 6¼" hole in spindle.
One No. 5A Potter & Johnston Automatic, high serial.

POWER PRESSES: Nos. 23 and 24 V. & O. geared power presses.

DRILLS: .....Two 4-spindle 23" Rockford Drill Presses, alternate spindles sliding heads, size of table 22"x86".
Two 42" Cincinnati Upright drills, b. g., and p. f., gear box drive.
One 4-spindle Leland-Gifford Sensitive, No. 2 M. T. Power Feed to spindles.

GRINDERS: .....Two 6"x30" Norton Plain Grinders.
One 14x72" Norton plain grinder.
One No. 2 Cincinnati plain grinder.

SHAPERS: .....One 16" Eberhardt Bros. (Newark) Shaper, B. G.

MISCELLANEOUS: One 6"x48" Pratt & Whitney Thread Miller.
One 8' Ohl Power Squaring Shears, cap. 16 gauge.
One Foster No. 1B Universal Turret Lathe.
One 14" P. & W. Vert. Surf. Grinder with mag. chuck.
One No. 2 Brown & Sharpe Vertical Miller.
One No. 3 Cincinnati plain miller, S. P. D.
Other High Grade Equipment.

Morris Machinery Company, Inc., 93-115 Chestnut St., Newark, N. J.

"Semco" Used Machinery

Boring Mill, Detrick & H. 42" vert.
Boring Mill, Gisholt 36" vertical.
Broaching Machine, No. 3 LaPointe.
Drill, Moline No. 8-D, 10' rail; 26 No. 14 style D hds. 99% new, $1500.
Drill, Moline No. 7-D, with 4 No. 36 heads, 95% new, $1000.
Drill, Bar, 2-spindle.
Drill, Gardam multiple, 4-spindle.
Engraving Machine, Keller No. E-3, 90% new, $1000.
Lathe, Bradford 18"x8'.
Lathe, Seneca Falls 15"x6'.
Lathe, American 14"x6'.
Lathe, Pratt & Whitney 16"x6', with taper and relieving attachment.
Lathe, Pratt & Whitney 11"x5'.
Milling Machine, LeBlond No. 0½.
Milling Machine, Pratt & Whitney No. 12 Lincoln.
Milling Mche., B. & S. No. 3 vertical.
Milling Mch., LeBlond No. 1B, new.
Milling Machine, Cooley & Edlund Type A and B, NEW.
Milling Machine, National No. 0.
Milling Mch., Whitney Hand.
Planer, Hendey 16"x4'.
Press, Toggle Draw., Bliss, No. 1½.
Shear, Wais No. 2 universal.
Saw, Cordesman 36" band.
Saw, Cochrane-Bly No. 4B, cold.
Threading Machine, Webster & Perks 4-spindle.
Oil Separator.
Grinder, Bath No. 1 universal.
Shaper, P. & Johnston 15".

The Seifreat-Elstad Machinery Company

Storeroom—Dayton, Ohio

Cincinnati, Columbus

Power Presses and Squaring Shears

EXCLUSIVELY

EMBOSSING PRESSES

1—No. 27 Bliss, 1000 tons, K. J.
1—No. EG24 Ferracute, 150 tons K.J.
1—No. 45 Bliss, 200 tons, geared.

STRAIGHT SIDE PRESSES

1—No. 75½ Bliss, geared.
1—No. 75½ Bliss, flywheel
3—No. 57 Toledo, geared, tie rod.
1—No. 56 Toledo, geared.
1—No. 65 Consolidated, geared.
1—No. D301 Ferracute, 300 tons pressure.

TOGGLE PRESSES

1—No. 168½ Toledo, will draw 12½".
1—No. 3¾ A Bliss.
2—No. 1½ Bliss, friction clutch.

SQUARING SHEARS

1—Obl, 10'x3/16" cap.
1—Niagara 8'x5/16" cap., 16" gap.

DOUBLE CRANK PRESSES

1—No. 166½ Consolidated, grd., 48".
1—No. 93A Toledo, geared, 37".
1—No. 96½ Bliss grd., 48" bet. up.
1—No. 5 Bliss, geared, gap frame.
1—No. 4¾ Bliss, geared, gap frame.
1—No. 4¾B Bliss, 38" geared.
1—No. 3A Bliss, grd., 36" bet. up.
1—No. 2 Bliss, flywheel, 28" bet. up.
1—No. S.G. 86 Ferracute, 64" bet. up.
1—SRG 102 Ferracute, 40" bet. up.
3—No. S51 Ferracute, 28" bet. up.

SOLID BACK PRESSES

Bliss-Stiles all sizes, flywheel and geared
3—No. 23 V. & O. combination.

Inclinable and open back Presses, all makes and sizes.

Over 1200 Presses in Stock. ***Write for New Catalogue.***

Joseph HYMAN & Sons

Tioga and Almond Sts., Philadelphia, Pa.

NEW and USED

SPECIAL PRICES

Planers.

36x36x10 Gray, 2 heads.
30x30x8 Liberty, 2 heads.
24x24x24 Cincinnati Crank.

Milling Machines

Becker Model C. Vertical.
Becker No. 5B. Vertical.
Cincinnati No. 2. Vertical.
Cincinnati No. 3. Vertical.
Kempsmith No. 5 Plain.
Ohio No. 34 Plain.
Rockford No. 0 Plain.
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W & S No. 2 Fox.
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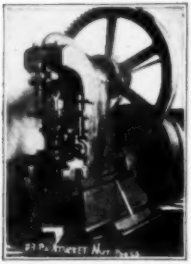

2—No. 1½	$300.
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1—No. 2½	475.
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48" Western plain radial, gear box or motor drive, (3).

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12"x4' Hendey geared head, motor driven, serial No. 16888.
14"x6' Hendey tie bar, taper attach.
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No. 3 Cincinnati plain.
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36" FELLOWS Gear Shaper, wonderful equipment	200.
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21" GISHOLT Turret Lathe, taper attachment, belt driven	300.
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No. 6 BRYANT Semi-Automatic Internal Grinder	100.
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No. 3 BROWN & SHARPE 26" Spur Gear Cutter	300.
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Open Side Planer

Detrick & Harvey 42"x42"x12', with one head on rail and one head on side; arranged for constant speed belted motor drive, with countershaft and motor bracket mounted on housing; equipped with auxiliary roller table. Maker's serial number 646. Perfect condition. Price, F.O.B. Philadelphia, $2750.00. Can be seen in operation.

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The Beal Bulletin

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1—Cincinnati No. 3 Full Univ. Miller, equipped with div. heads, vise, chuck, counter, and all reg. equip. table 12"x52".
1—New Haven 36"x14' Q. C. G. Lathe, triple geared, comp. rest, 2½" hol. spdl., taper attach., and reg. equipt., takes 6'6" bet. centers.
1—Fifield 26"x31' Triple Geared Screw Cutting Lathe, comp. rest, hol. spdl., 21" ind. chuck fitted, counter, etc., 25' bet. centers.
1—Fay & Scott 16"—36"x14' Ext. Bed Gap Lathe, d. b. g., 1½" hollow spdl., pan bed, counter, etc., also jack for ext. bed.
1—Cincinnati-Bickford 3 ft. Plain Radial, gear box, S. P. D., 95% new.
1—Oster 8" Pipe Machine, arranged for motor drive, with lot of dies and extra equipment.
1—American 14" Univ. Shaper, with vise, counter, wrenches, etc.
1—Catlin No. 2 Keyseater, cap. up to 1¼", all geared, table 18"x18", direct connected auto. reverse countershaft.
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For Speed and Precision

No. 1 Plain and Surface Grinder

(Micrometer Adjustment)

Grinding wheels	8"x1"
Between wheels	15"
Height to spindle center	40"
Table surface	8"x14"

Has vertical travel of 12" on guides, ¾" by micrometer, and may be raised to within 2" of spindle center. Wheel grinds to center of a surface 9" wide.

Spindle speed	2450 r.p.m.
Countershaft speed	800 r.p.m.
Floor space	18"x24"
Net weight	300 lbs.

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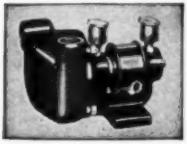

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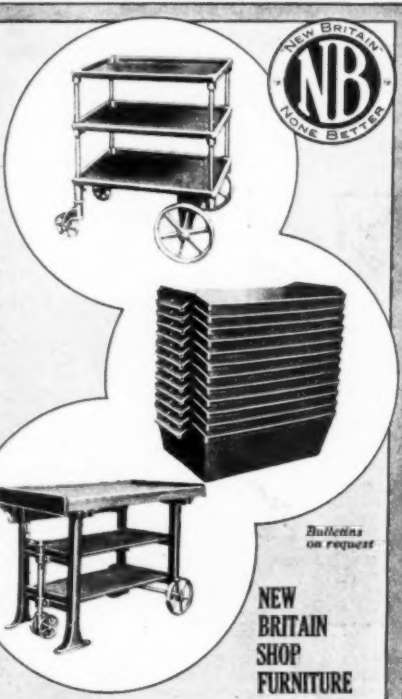

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